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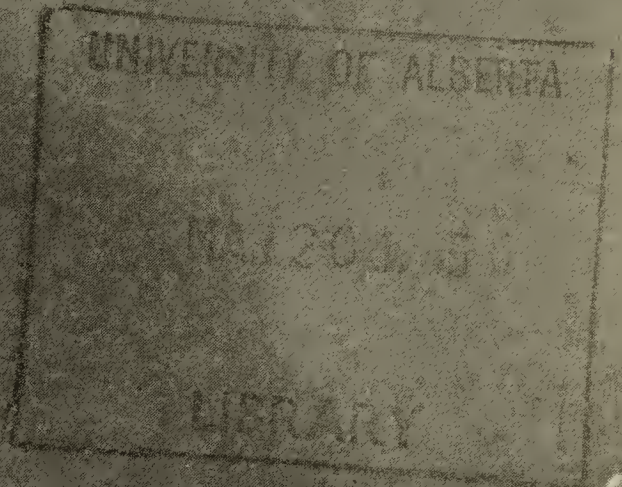


SCIENCE

# BLUE JAY

MARCH 1985

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# BLUE JAY

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# MOUNTAIN LADY'S-SLIPPER IN SASKATCHEWAN

VERNON L. HARMS, The W.P. Fraser Herbarium, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0, LAWRENCE I. BINKLEY, 112 Cypress Street, Maple Creek, Saskatchewan, S0N 1N0 and GEORGE F. LEDINGHAM, Herbarium, Department of Biology, University of Regina, Regina, Saskatchewan. S4S 0A2



Figure 1. *The Mountain Lady's-slipper in the Cypress Hills. (Photograph by Lawrence Binkley).*

On 17 June, 1984, Florence Quick discovered a single flowering orchid of the Mountain Lady's-slipper (*Cypripedium montanum* Dougl.) growing in a wooded cottage area west of Loch Leven, in Cypress Hills Provincial Park in southwestern Saskatchewan (Fig. 1). This find was reported to Binkley, who tentatively identified it, sketched and described it in detail, and contacted Ledingham and Harms. This plant was observed throughout the rest of the 1984 summer season by Binkley and Mary Helmerson. The single flower remained in full blossom for an astonishing three weeks, perhaps because fertilization was not achieved for this isolated plant. Subsequently, the capsule never fully developed nor expanded. The stem stayed mostly green until nearly mid-September, with the leaves and dried flower parts remaining attached. On 20 September, 1984, the upper stem portion was clipped for a voucher specimen (*G.F. Ledingham and L.I. Binkley no. 8929, SASK*), which, together with the color photographs of the plant in the flower stage, serve to document this new provincial record.

This orchid species of moist woods in the northern Rocky and Cascade Mountains was previously known eastward to Waterton National Park in southwestern Alberta, and to the Big Belt, Little Belt, and Bighorn Mountains of central and south-central Montana and northcentral Wyoming (Fig. 3).<sup>5 6</sup> It was never previously recorded for anywhere in Saskatchewan nor for the Cypress Hills area of Alberta.<sup>1 2 3 4</sup> Its discovery in the Saskatchewan Cypress Hills represents an interesting and significant range extension. Its occurrence here parallels that of various other "cordilleran" plant species [e.g. Lance-leaved Spring Beauty (*Claytonia lanceolata*), Black-fruited Hawthorn (*Crataegus douglasii*), Mountain Bladder Fern (*Cystopteris montanum*), Woodland Star-flower (*Lithophragma bulbifera*), Large Yellow Monkey-flower (*Mimulus guttatus*), Narrow-leaved Spring Beauty (*Montia linearis*), American Pinesap (*Monotropa hypopitys*), Pine Drops (*Pterospora andromedea*), and Lodgepole Pine (*Pinus contorta*)].

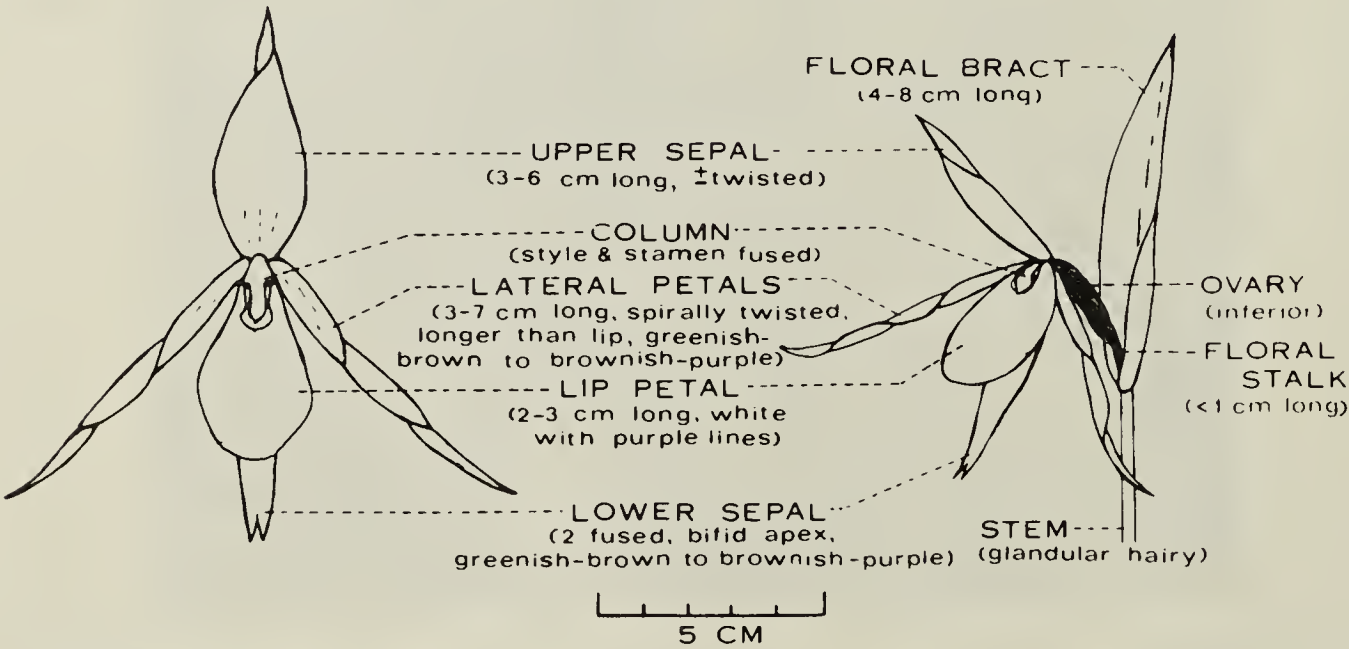


Figure 2. Flower structure of the Mountain Lady's-slipper with indication of diagnostic features.



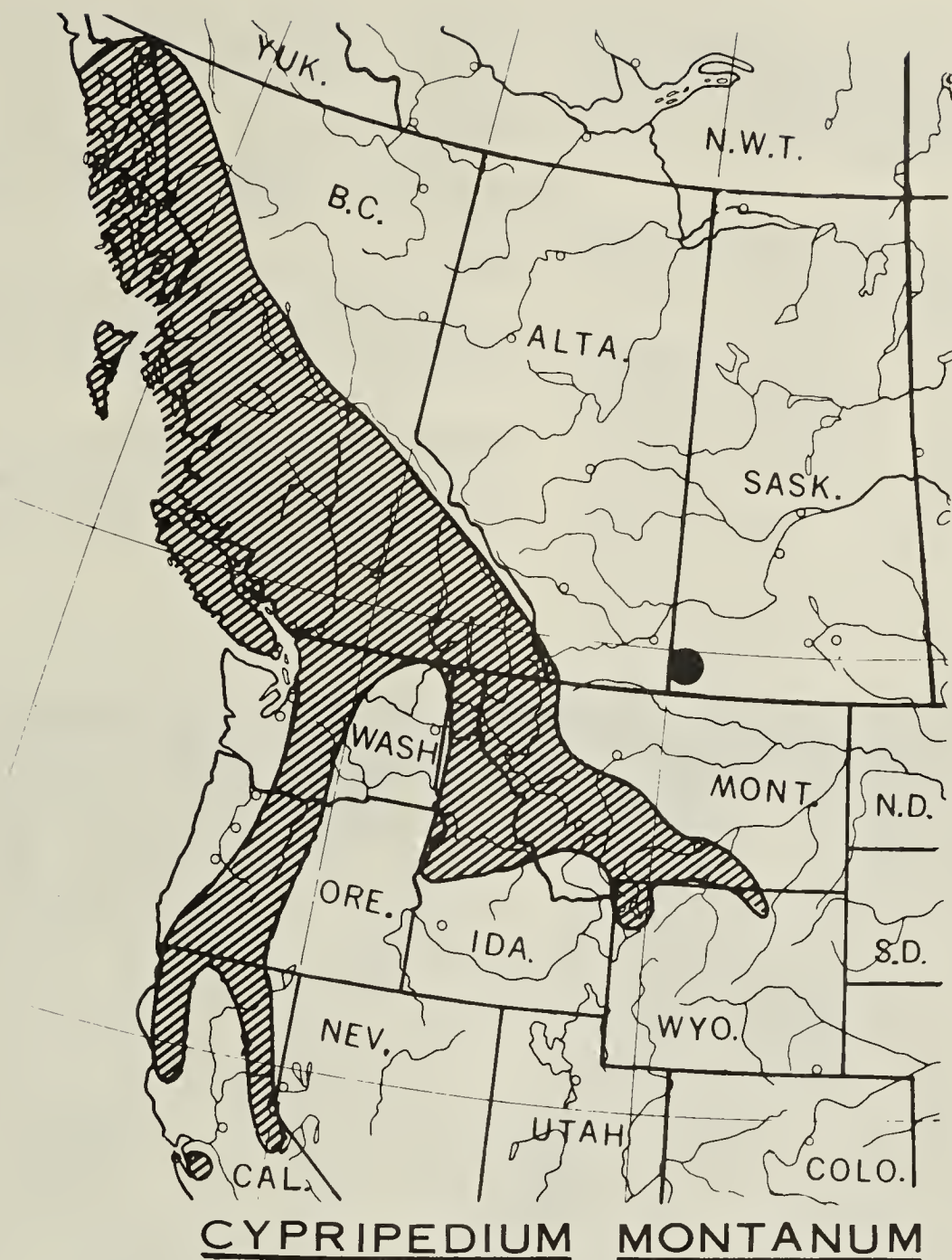


Figure 3. *Distribution of the Mountain Lady's-slipper (indicated by hatching, with the new Cypress Hills locality shown by a solid dot).*<sup>5 6</sup>

The Mountain Lady's-slipper can be distinguished from the similar Small White (or Northern, or Sparrow's-egg) Lady's-slipper (*Cypripedium passerinum* Dougl.) primarily on the bases of: (1) its luminescent white lip-pouch longer than 2 cm and usually purple-lined below; (2) its sepals and lateral petals over 3 cm long, distinctly longer than the lip, greenish- to purplish-brown, and twisted; (3) its stems densely grandular-hairy (not just fuzzy-villous); (4) its fruiting stalk 1 cm long

or less; and (5) its stem often taller than 3 dm. (Fig. 2).<sup>5 6</sup> In its stem and leaf characteristics, as well as in the shapes and sizes of its flower parts, the Mountain Lady's-slipper actually seems most similar to the Yellow Lady's-slipper (*C. calceolus* L.) although contrasting sharply from it in flower color.

The documented occurrence in this area of one individual of this species suggests that, if searched for, more plants of the Mountain

Lady's-slipper might be found in the Saskatchewan and Alberta Cypress Hills, although the species is probably very rare here.

<sup>1</sup>BREITUNG, A.J. 1954. A botanical survey of the Cypress Hills. The Canadian Field-Naturalist 68:55-92.

<sup>2</sup>BREITUNG, A.J. 1957. Annotated catalogue of the vascular flora of Saskatchewan. American Midland Naturalist 58:1-72.

<sup>3</sup>FISHER, R.M. 1980. The orchids of the Cypress Hills. O. Pall, Calgary. 39 pp.

<sup>4</sup>HARMS, V.L. 1974. The native lady's-slipper orchids of Saskatchewan. Blue Jay 32:64-74.

<sup>5</sup>LUER, C.A. 1975. The native orchids of the United States and Canada excluding Florida. New York Bot. Gard., Bronx, N.Y. 361 pp.

<sup>6</sup>SCOGGAN, H.J. 1978. Flora of Canada, Part 2 — Pteridophyta, Gymnospermae, Monocotyledoneae. National Mus. Canada, Ottawa.



*Crocus*

*Frank Switzer*



# SOUTHWARD MIGRATION OF PAINTED LADIES IN ALBERTA AND BRITISH COLUMBIA

R. WAYNE NELSON, 4218 - 63 Street, Camrose, Alberta. T4V 2W2

*"The present species is a highly elegant insect, well named the Painted Lady, and in France the 'Belle Dame'"*<sup>5</sup>

The Painted Lady (*Vanessa cardui*) is the most widespread of all the butterflies, occurring in Africa, Europe, Asia, many islands, small parts of South America, and much of North America.<sup>7 14</sup> This species is able to persist indefinitely only in warm climates, although adults occasionally hibernate through the winter in Washington and may overwinter and colonize adjacent areas from Britain and parts of northern Europe.<sup>13 1</sup> Each year in North America some Painted Ladies migrate northward and eastward in the spring from their area of year-round residence in the Sonoran Desert and nearby deserts of western Mexico and southwestern California. Occasionally a spectacular migration occurs, apparently in response to heavy winter rains in the deserts.<sup>8</sup> As the Painted Ladies radiate outward across the continent they establish a network of colonies from which new butterflies emerge in summer. It is not clear whether some or all of these newly emerged butterflies continue farther northward or just reside in the area of their emergence. In any event, in peak migration years the species may be found from the Pacific to the Atlantic and as far north as the northeastern coast of Labrador, Fort Severn, Ontario, Churchill, Manitoba, Chesterfield Inlet and Fort Resolution, N.W.T.<sup>15 10</sup>

Some authors suggest that the migration of Painted Ladies is essentially one-way.<sup>14</sup> If so, the value to the species of this migration is extremely puzzling. If a significant number of the northern progeny of Painted Lady migrants were to make a return migration to the overwintering area, then we could hypothesize a genetic and survival advantage to the species as a consequence of northward movements and the resultant heavy mortality and selection. Perhaps the Painted Lady could be thought of as a smaller, occasionally (vs. annually) migrant, Monarch Butterfly (*Danaus plexippus*).

Northward migrations of Painted Ladies have received considerable exposure in the popular press and scientific literature.<sup>15 2 4</sup> In spring and early summer, observers may be looking for and recording "signs of spring", and an influx of butterflies, especially an influx which clogs car radiators and windshields and makes highway pavement hazardously slippery, is difficult to miss.<sup>2 4 6</sup> On the other hand, at the end of summer the gradual disappearance of butterflies, or the southward broad-front migration of a less impressive number of butterflies, may be easily overlooked.

Southward migrations of Painted Ladies have been reported in the literature relatively rarely. Williams summarized the literature to that date and noted southward migrations in late summer or autumn in Europe and North America.<sup>15</sup> From North

America he reported a dozen observations of migratory flights after the beginning of August, from California, Colorado, Minnesota, New Jersey, New York, Florida, Ontario and Manitoba, all but one of which had a southerly component. Eff summarized 1973 observations for the Rocky Mountain area and mentioned late July movements to the southwest and later in the fall movements mostly due south.<sup>6</sup>

The most recent major invasion of Alberta and British Columbia by Painted Ladies occurred in 1973 although the species occurs in the B.C. interior in small numbers in most years (R.P. Nelson, pers. comm.) and is perhaps less regular in Alberta.<sup>2 3</sup> In that year I noted some evidence of a southward movement near Calgary. On 8 September, between 1410 and 1720 h (local times used throughout) while driving about 160 km looking for raptors with M.R. Lein in the area south and southeast of Calgary five Painted Ladies were sighted, all heading south into a 8-16 kmph south breeze.

In 1983 Painted Ladies migrated northward through the Denver area during late April, but no southward movement was noted (R.E. Standford, pers. comm.) A light migration was noted in Saskatchewan (R.R. Hooper, pers. comm.); the species was present in small or moderate numbers through the summer in all three western provinces; and no southward movement was noted in Saskatchewan or south-central B.C. in the fall (R.R. Hooper, C.D. Bird, R.P. Nelson, pers. comm.). In Alberta an autumn migration was recorded: M.T. Myres observed large numbers moving southward near Calgary (C.D. Bird, pers. comm.); D. Lawrie recorded large numbers in the city of Calgary 15-18 August and in the vicinity of Chester Lake near Fortress

Mountain 21 and 22 August, all heading west-northwest;<sup>11</sup> on 21 August C.J. Anderson and family (pers. comm.) saw large numbers, not conspicuously migrating, near Banff townsite; and W.K. Hall and family (pers. comm.) observed large numbers of Painted Ladies, feeding on yarrow and fireweed, but not apparently migrating, at least up to 2400 m near Chester Lake and on the trail to Ribbon Creek Falls about 10 km north, in three days between 22 and 26 August.

This article puts on record the fortuitous (and somewhat casual) observations of a major southward (and westward) migration of Painted Ladies in mid-late August and early September 1983, at a number of locations in central and southern Alberta and southeastern B.C.

#### **Camrose to Edmonton, 13-22 August**

On Saturday 13 August, a warm sunny day, Dennis Pfeffer reported seeing numbers of butterflies flying southeast on a northwest breeze near noon between Camrose and Strome, 57 km to the east-southeast (Fig. 1). I first observed the migration late that afternoon just east of Camrose. In the early evening of 14 August, another warm and sunny day, the migration direction was almost due west when observed on the west edge of Camrose; some of the butterflies were identified as Painted Ladies.

From 15 to 19 August, and on the 22nd, while commuting at about 100 kmph the 80 km from Camrose to Edmonton via Highways 13, 21 and 14, I noted no butterflies moving during the morning trips (about 0640-0740 h; temp. 8-13°C), but I counted many migrating butterflies on several of the return trips in the evening (about 1650-1750 h). Table 1 summarizes the number of butterflies observed over



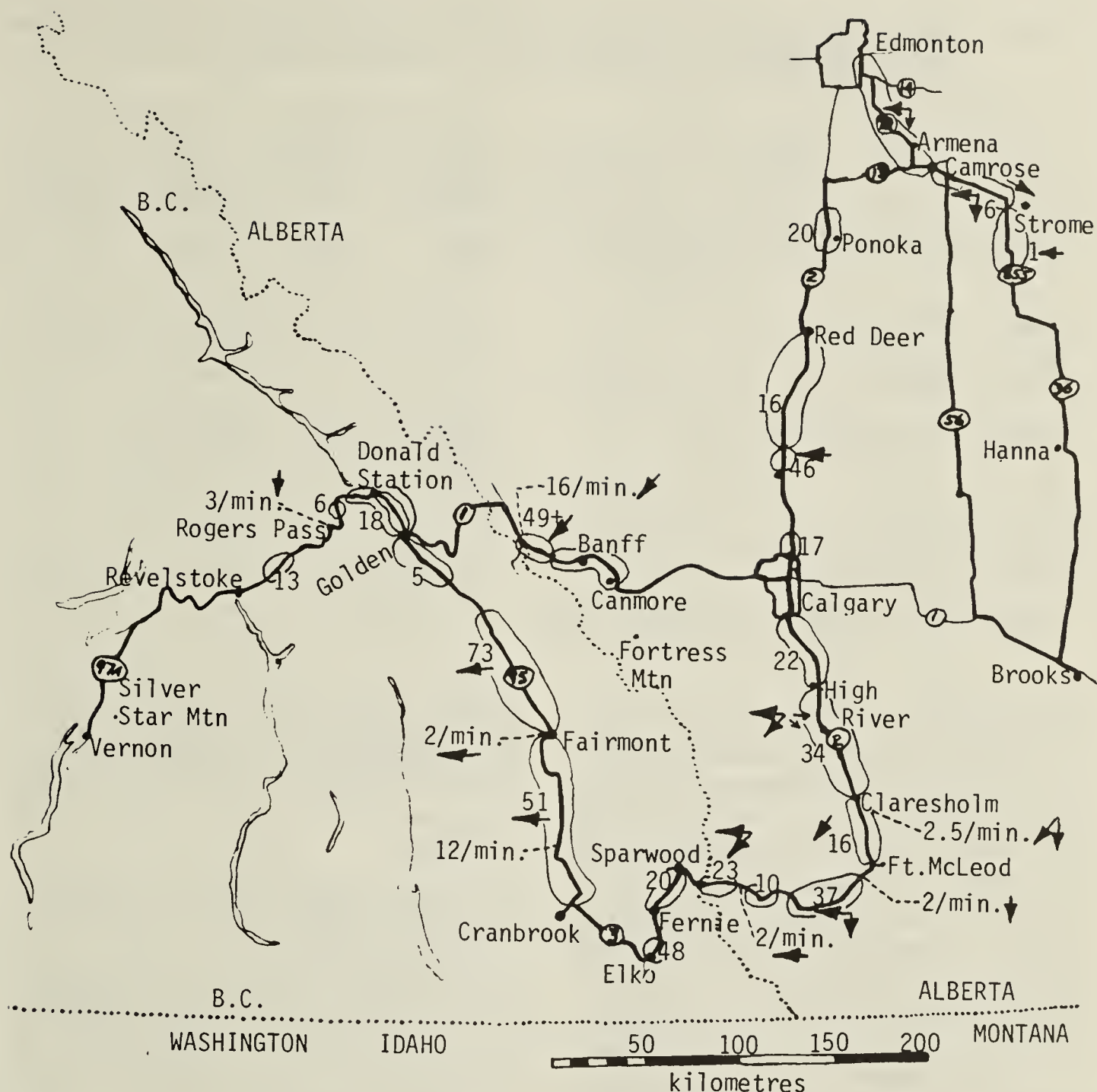


Figure 1. *Painted Lady* migration observed during travels in central and southwestern Alberta and southeastern British Columbia, August 13 - September 11, 1983. Numbers indicate the butterflies recorded from a vehicle moving at highway speed through the circled areas. Arrows summarize the individual flight directions. In some areas the data were not obtained. See text for additional information.

or immediately adjacent to the highway, and the environmental factors associated with these observations. Probably all of the butterflies were travelling at less than 4 m elevation, and most were about 1-2 m above the ground. The butterflies sometimes travelled across substantial breezes and sometimes with the

breezes, but they did not migrate during west or northwest winds of 30-40 kmph. On these days virtually all of the movement was to the west, to the south, or between west and south.

On the 15th, when en route to Camrose, I finally awakened to the potential of automobile-counting of

Table 1. PAINTED LADY MIGRATION OBSERVED BETWEEN EDMONTON AND CAMROSE, ALBERTA, 15-22 AUGUST 1983.

<i>Date</i>	<i>Time</i>	<i>No. Painted Ladies</i>	<i>Migration Direction</i>	<i>Wind kmph*</i>	<i>Temp. °C</i>	<i>Cloud Cover</i>	<i>Notes</i>
15 Aug.	1746-1754	93 in 12 km	92-W, 1-E	NW, 10-15	23	1/10	
16 Aug.	1950-2044	1	1-S	N, 5	?	6/10	Sunny
17 Aug.	1655-1747	7	mostly S	NW, 5	?	8/10	
18 Aug.	1706-1758	0	0	W, 30 & NW, 40	20	5/10 to clear	
19 Aug.	1624-1715	10	?	SSE, 25	18	clear	
22 Aug.	1710-1801	75±	?	SE, 10	?	1/10	

\*Estimated using Beaufort Scale criteria.

the butterflies. The most dense movement was recorded immediately - 92 butterflies flying west over a north-south distance of 12 km (in approx. 8 min.) between Armena and the junction of -21 and -13, eight km west of Camrose. If the butterflies were observed within 50 m in front of the car and were flying at right angles to the highway, then the observations from the moving car would be similar to those made by a stationary observer noting butterflies crossing a 50 m line at right angles to the migration path. If this assumption is valid, then about 12 Painted Ladies crossed a 50 m north-south line each minute, and 14,400 crossed a one kilometre line in one hour. If the migration front stretched for 100 km at this density, and the migrants passed at this density over this line for only six hours, almost one billion butterflies would have been involved in the migration. In view of the observations of these butterflies migrating elsewhere in Alberta and southeastern B.C. during the last half of August, it is clear that extremely large numbers of Painted Ladies

were involved in this particular migration, although this particular estimate based on a very small survey may be exaggerating the real scale of the movement.

**Camrose, Calgary, Banff, Revelstoke, Vernon, 24 August**

The migration was also evident on 24 August at a number of locations when I travelled from Camrose (0915 h) to Vernon, B.C. (2030 h) via Highways 13, 2, 1, and 97A (Fig. 1). At 1005 butterflies were first encountered west of Ponoka, 14 in two minutes, but only 6 in the following 13 minutes and none thereafter. The weather deteriorated, and light rain fell from Red Deer to Calgary.

At about 1430, midway between Canmore and the east gate of Banff National Park, with the sky cloudy bright (10/10) and the temperature about 18° C., we encountered throngs of Painted Ladies. Butterflies were in small groups on the roadsides, especially on thistle patches where three to five or more fed in a space of one square m. Almost continuously one or a few could be seen flying



southwest across the highway, but most were feeding or resting.

To the west their numbers thinned out, but then many were encountered at 1606 near the Eisenhower Junction (#1 & #93), heading about southwest at right angles across the Trans Canada Highway. Forty-nine were counted from the car in a 3 min. timed period while driving at 90 kmph. Here and for several km northwest there were dead butterflies conspicuously on the pavement at least every 7-10 m, and others flying across the road through and over the traffic. Their numbers decreased and then ceased a short distance further NW. At 1733 h, northwest of Golden in the Columbia River valley, Painted Ladies again were noted, but in low numbers. The weather deteriorated as we travelled to Revelstoke and Vernon, and no more butterflies were noted.

#### **Vernon, 25-29 August**

During 25-29 August, Robert P. Nelson showed me a Painted Lady colony he had been observing through the summer on Silver Star Mountain just northeast of Vernon. On a warm afternoon 6-10 individuals could be seen near the thistle patches at any one time. There was no evidence of a sudden migration of these individuals away from the colony, or of others into the colony, and the colony slowly diminished in size through September and early October (R.P. Nelson, pers. comm.). On several rural excursions during this period we saw no evidence of a Painted Lady migration in the vicinity of Vernon. R.P. Nelson, James Grant, David Threatful, and Cris Guppy, observing butterflies in the N. Okanagan or Revelstoke area during the summer and fall of 1983, noted no late summer or fall migration of this species.

#### **Vernon, Revelstoke, Golden, Cranbrook, Sparwood, 30 August**

On 30 August we travelled from Vernon (0835 h) to Revelstoke and Golden (1340 h), then up the Columbia and Kootenay River valleys to Cranbrook (1700-1740 h) and up the Elk River valley to Sparwood (1905 h), via Highways 97A, 1, 95, and 3. Painted Ladies were seen along much of this route (Fig. 1). The weather at Vernon was cloudy-bright; it soon became sunny for the rest of the trip. Painted Ladies were first encountered (1050 h) about 37 km southwest of the summit of Roger's Pass; no direction of migration was evident as we passed. At Glacier Park Centre in Roger's Pass (1120-1143 h) we noted a steady southward movement of three Painted Ladies per minute crossing a 30 m west-east line between the Centre and Highway 1; they were travelling in sunshine on a 10 kmph north breeze. None were observed while we descended from the Pass, but six were encountered in 1.5 km in the valley floor at Glacier Park East Gate. A few were seen during the descent to the Columbia River crossing at Donald Station, and 18 were counted in the 20 km of valley bottom from there to Golden.

While driving the 243 km from Golden (1340 h) to Cranbrook (1700 h) we counted 129 Painted Ladies, or about one every 1/2 km, mainly flying west across the highway. Just west of Fairmont at a service station, in 8 minutes (at 1540 h) we noted 15 Painted Ladies heading west across a 30 m north-south line; the weather was sunny and very warm with a south breeze of 20 kmph. About 5 km south of Skookumchuk Bridge, in a distance of only 1.6 km 12 butterflies were counted heading west. Beyond Elko (1830 h) 48 butterflies were seen in 5 km of mostly shaded valley floor. About one per km were sighted be-



tween Fernie (1845 h) and Sparwood (1905 h).

**Sparwood, Harmer Ridge, 27 August**

John Chala reported seeing "hundreds" of butterflies, identified from his description as Painted Ladies, in Sparwood 27 August, and the same day Mike Halko observed "hundreds" while at work just east of the town at 2300 m on Harmer Ridge, a very rocky area.

**Sparwood, Crowsnest Pass, Ft. McLeod, Calgary, Camrose, 31 August**

While in Sparwood we saw several Painted Ladies in flower gardens. We encountered the butterfly migration from Sparwood (1053 h) all along this route (via Highways 3 and 2) until sundown at 2021 h when we were west of Ponoka (Fig. 1).

At Coleman, about 35 km east of

Sparwood, Painted Ladies were migrating southwest in a dead calm. While stopped for 3 min. amongst the boulder rubble of Frank Slide, 6 Painted Ladies were sighted flying west across a 5 kmph north breeze, straight at the bare face of Turtle Mountain. In the mountains and foothills the movement was all west or southwest.

In gently rolling rangeland about 6 km west of the junction of Highways 3 and 2, six Painted Ladies were counted in three min. crossing a 30 m east-west line, flying south into a southwest 10 kmph breeze; it was sunny, with clouds 7/10, about 25° C. To the north the sky gradually became more clear, with a south breeze at 5 kmph. On the prairies the migration was mainly west or southwest. Occasionally groups were sighted travelling south or



*Painted Ladies feeding on thistle blossoms*

*R.W. Nelson*



southeast. Strangely, none were encountered in the southern and central part of Calgary nor along a stretch of Highway 2 north of Calgary, but suddenly (about 1900 h) in a 13.5 km stretch just north of Carstairs 46 were counted; these were almost all heading west (several were flying east) on an east 10 kmph breeze in sunshine. Between Red Deer and Ponoka we noted only 4 butterflies, the last at 2021 h just after the sun disappeared.

#### **Camrose to Edmonton, 2-9 September**

During this period I was again commuting the Camrose-Edmonton route. At least one day this period had weather comparable to that experienced earlier during the main migration. However, no Painted Ladies were detected here during this time or later in the fall.

#### **Camrose to Brooks, return. 9-10 September**

During the afternoon of 9 September we travelled Highways 13, 855, 12 and 36 to Hanna and Brooks. Conditions were sunny, clouds 3/10, 14°C, and a south breeze at 15 kmph. Two Painted Ladies were seen heading south just inside the east edge of Camrose; when stopped for several minutes about 23 km southeast of Camrose, we saw one Painted Lady heading south and three flying west. The last one of the season was observed south of Strome flying west.

#### **Size of the Migration**

Earlier I speculated on the number of butterflies involved in the migration as the result of only 8 minutes of particularly dense movement between Camrose and Edmonton.

From Golden to Cranbrook, in 3 hours of travelling on 30 August we saw 127 Painted Ladies along a (roughly) 250 km line, or 42 butterflies an hour. Assuming that we saw all

the butterflies within 50 m in front of the car, this would represent 42 butterflies per hour crossing a 50 m piece of the highway, or 630,000 crossing the 250 km of highway in the 3 hours we were driving. Assuming the migration was at the same rate from about 0900 to 1900 h, more than 2 million butterflies crossed that highway that day.

Similar calculations for the Ft. McLeod-Ponoka transect (330 km in 5 hrs of travelling) 31 August show 0.5 butterflies/km travelled, and over 3 million butterflies crossing that transect in a ten hour period that day.

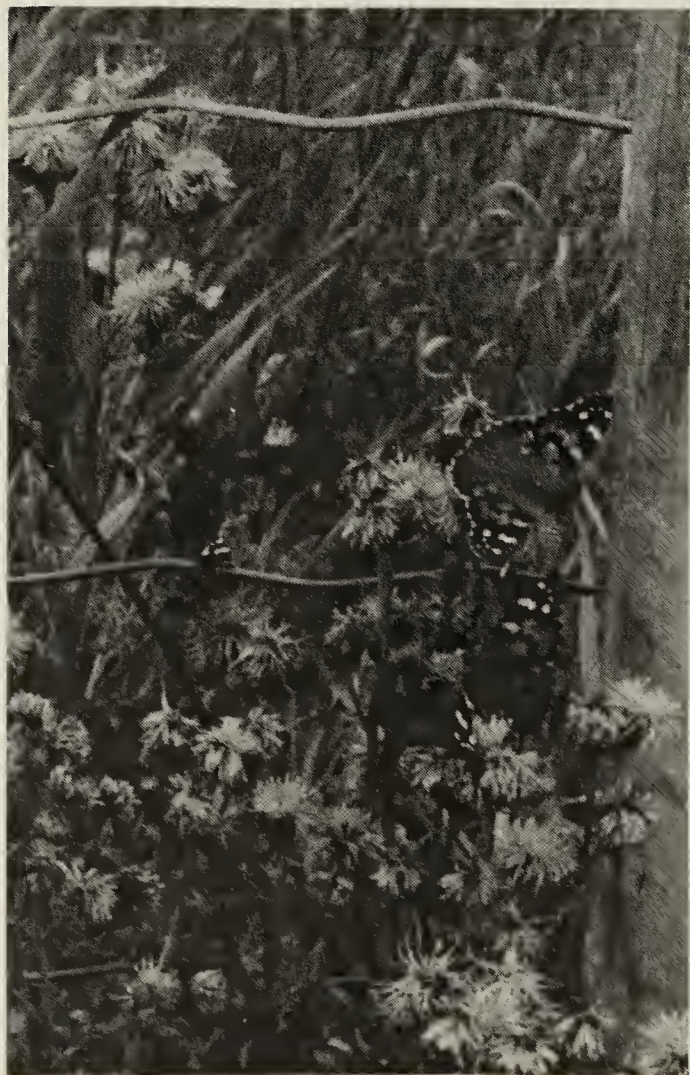
The two transects are roughly parallel and are very roughly one day's travel apart for a butterfly travelling over or through the mountains at right angles to the transects at a ground speed of 19 kmph (12 mph<sup>12</sup>). (See Fig. 1) Consider three blocks of butterflies; the first block traversed the western transect 30 August and was surveyed; the second block traversed the eastern transect 30 August and crossed the western transect 31 August, uncounted; the third block crossed the eastern transect 31 August and was counted. If similar numbers were moving on both of these days, each block probably represented 3 million butterflies. Without a great deal of speculative analysis of weather data it is not possible to estimate how widespread this Painted Lady movement was, nor what total numbers of butterflies were involved during the last half of August and early September. From the observations of 30-31 August and the significant distances involved in those transects, it is probable that at least 10 million butterflies were involved in the movements of these two days in central and southwestern Alberta and southeastern B.C.



## Origin, Destination, and Direction of Migration

Presumably the northward migrants were particularly successful in breeding in spring-summer 1983. (Were some weather conditions especially favorable for the production of large numbers of Painted Ladies in that year?) Because there was not a conspicuous, major build-up of Painted Ladies in the Canadian prairies during that summer (Hooper, Bird, pers. comm., pers. obs.), I presume that the bulk of the observed migrants originated in the aspen parkland, boreal forest, or farther north.

Although the butterflies' destination in northern Mexico and southwestern California is almost due south of southwestern Alberta and southeastern B.C., there was a major westerly component to many



*Painted Ladies, August 1983*  
R.W. Nelson

of the recorded flight directions; some were clearly flying south, but others were heading due west. By flying due south, however, a butterfly would encounter much mountainous terrain in the 2000 km between Alberta and the assumed overwintering area. Perhaps by flying more directly across the mountains, and then turning south or south-southeast, the butterflies have an easier trip and are more likely to arrive in their overwintering area. It remains to be shown that any of the northern Painted Ladies do, in fact, arrive in the autumn in the overwintering area.

## Suggestions for Future Observations

In retrospect, there were many things which I should have done during the widespread southward migration of Painted Ladies in 1983. Some suggestions are offered in order that the dimensions of the migration and the migration biology of these creatures might be better studied when the relatively unique circumstances allow such a phenomenon to be repeated.

1. A telephone fan-out should have attempted to obtain simultaneous observations of the migration at a number of locations, to define the timing, dimensions, density, and direction of the migration over a large area.

2. When recording data on a butterfly migration full data should be collected on local weather conditions, especially temperature, wind direction and speed, per cent cloud cover, presence and direction of sun, and exact time of day.

3. In addition to counting migrant butterflies within a fixed distance of the observer (preferably at right angles to the main direction of travel), the observer should note the exact direction of the migration, the average and range of the height of



the migrants above the substrate, and the type of substrate over which the butterflies are travelling.

4. Ground speed of the migration should be sought under a variety of wind speeds and directions, and the direction of the migration should be investigated with regard to the present wind direction and speed, and with regard to weather systems and wind directions prior to and after the migration observations.

5. Observations on a migration through whole days at a fixed location would be useful in determining whether and how the time of day, presence of the sun, sun angle, wind speed, wind direction, and air temperature affect the numbers of migrants, their migration, resting, and feeding activity, and their direction of travel.

6. The responses of the migrants to different landforms should be investigated, (e.g. where plains meet mountains), to detect changes, if any, in the characteristics of the migration.

### Acknowledgements

I thank the following people for their assistance: Alora and Jennifer Nelson helped with observations on the B.C. and Brooks trips. John Frisken was my commuting companion. The cited observers shared their observations with me. Special thanks to my father, Robert Nelson, for introducing me to butterflies, providing literature, and reviewing the manuscript.

<sup>1</sup>BAKER, R.R. 1972. The geographical origin of the British spring individuals of the butterfly *Vanessa atalanta* and *V. cardui*. J. Entomol. (A) 46:185-196. (Cited in Gilbert and Singer<sup>9</sup>).

<sup>2</sup>BIRD, C.D. 1973a. Spring 1973 migration of the Painted Lady butterfly into Alberta. Calgary Field Naturalist 5(1):5-7.

<sup>3</sup>BIRD, C.D. 1973b. Spring butterflies in the city of Calgary. Calgary Field Naturalist 5(1):8-9.

<sup>4</sup>BROWN, F.M. 1974. An invasion of eastern Colorado by *Vanessa cardui* (Nymphalidae). J. Lepidopterists' Soc. 28(2):175.

<sup>5</sup>COLEMAN, W.S. 1880. British Butterflies. George Routledge and Sons, New York. 179pp.

<sup>6</sup>EFF, J.D. 1974. The 1973 field season summary. Rocky Mountains. News of the Lepidopterists' Soc. No. 2 (15 Mar. 1974):4.

<sup>7</sup>EHRLICH, P.R., and A.H. EHRLICH. 1961. How to know the butterflies. Wm. C. Brown, Dubuque, Iowa. 262 pp.

<sup>8</sup>EMMEL, T.C. and J.F. EMMEL. 1973. The butterflies of southern California. Sci. Series 26, Nat. Hist. Mus. of Los Angeles County. 148 pp.

<sup>9</sup>GILBERT, L.E., and M.C. SINGER. 1975. Butterfly ecology. Annual Rev. Ecol. Syst. 6:365-397.

<sup>10</sup>HOOPER, R.R. 1973. The butterflies of Saskatchewan. Mus. of Nat. Hist., Regina, 216 pp.

<sup>11</sup>LAWRIE, D. 1984. (Painted Ladies migrating W and NW near Calgary.) 'News' of the Lepidopterists' Society 1984 (1):7.

<sup>12</sup>MCGREGOR, E.A. 1924. Painted Lady butterfly (*Vanessa cardui*). Ins. Pest. Surv. Bull. 4:70. (Cited in Williams<sup>15</sup>)

<sup>13</sup>PYLE, R.M. 1974. Watching Washington butterflies. Seattle Audubon Society, Seattle. 109 pp

<sup>14</sup>PYLE R.M. 1981. The Audubon Society field guide to North American butterflies. Random House, Toronto. 916 pp.

<sup>15</sup>WILLIAMS, C.B. 1970. The migrations of the Painted Lady butterfly, *Vanessa cardui* (Nymphalidae), with special reference to North America. J. Lepidopterists' Soc. 24(3):157-175.

# NORTHERLY RECORD OF THE LUNA MOTH IN SASKATCHEWAN

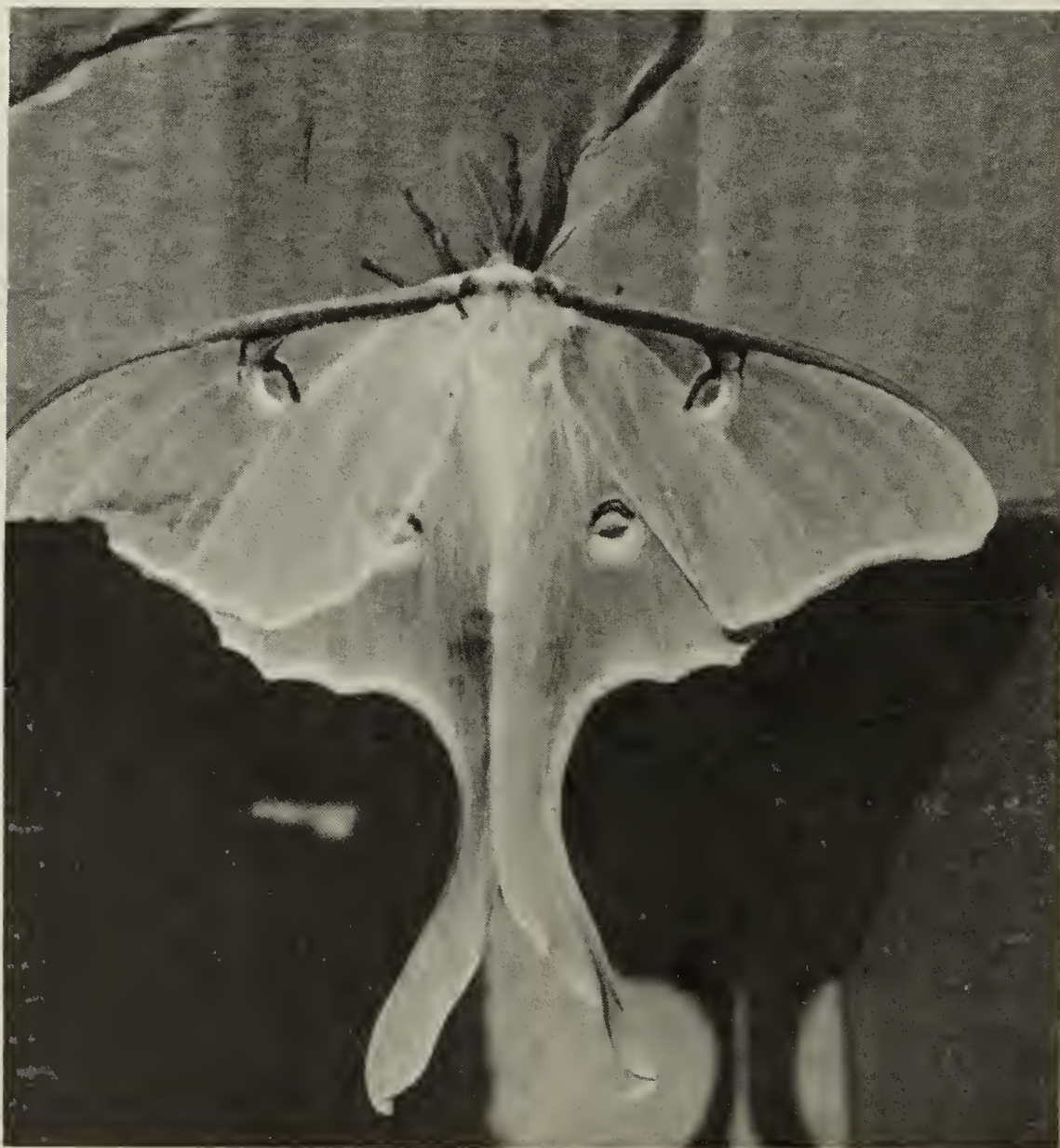
BRADLEY J. MUIR,  
P.O. Box 100, Waskesiu Lake, Saskat-  
chewan. S0J 2Y0

On 19 July, 1984, Tim Haughian, the attendant at the Narrows Campground, Prince Albert National Park contacted the Interpretive Service requesting the identification of a moth he had found by the campground kiosk that morning. I subsequently investigated, observed and photo-

graphed the moth which was then released unharmed.

The moth was approximately 10 cm from wing-tip to wing-tip and 8 cm from the base of the antennae to the end of the prominent tails of the hindwings. It was a soft, emerald green with a faint yellow area at the base of the wings. Two pairs of false eyespots were present. This is the description of the Luna moth (*Actias luna*, Saturniidae).

This finding at approximately 53° 59' N, 106° 17' W is perhaps the northern-most record of this species in Saskatchewan.



*Luna moth*

*Bradley Muir*



# LEOPARD FROG AT BOMPAS LAKE, SASKATCHEWAN

STUART HEARD, Lakeland  
College, Vermilion, Alberta.  
TOB 4M0

On the portage from Black Lake to Bompas Lake in northern Saskatchewan (59° 40' N, 105° W), along the border of a small, open-water muskeg, a quick movement in the water attracted attention. Closer investigation disclosed a large Leopard Frog (*Rana pipiens*) swimming through the sedges. I was able to catch the frog and David Henry and I examined it closely.

It was an adult Leopard Frog, approximately 3 in. long, an overall green color, spotted with darker green, yellow-margined spots. The overall appearance closely matched the description given by Mary Dickerson,<sup>2</sup> including pointed head, relatively slender body, yellowish lateral folds, and yellowish to white underparts. The large size, distinct spots, and lack of a dark band running through the eye identified the specimen as a Leopard Frog rather than Wood Frog. The frog was released where it was found, 15 August 1983. No photographs were taken.

Later, on the same portage a second Leopard Frog was seen, though not examined in hand.

The Leopard Frog has been recorded north of Lake Athabasca but was thought to be absent from the extreme northeast section of the province.<sup>1</sup> This sighting is evidence of the extended range of this amphibian since Bompas Lake is situated just east of extreme north-central Saskatchewan, some 30 miles from the Northwest Territories boundary. This sighting thus represents a modest northeastward range extension for the Leopard Frog in Saskatchewan. Stebbins<sup>3</sup> describes the Leopard Frog's distribution including the District of Mackenzie and the Great Slave Lake region<sup>3</sup>. This sighting is considerably east and south of his range identification. Perhaps further investigation of the range of this frog may prove subarctic distribution throughout Canada.

<sup>1</sup>COOK, F.R. 1977. A guide to the amphibians and reptiles of Saskatchewan. Department of Youth and Culture, Regina. 40 pp

<sup>2</sup>DICKERSON, M.C. 1969. The frog book. Dover Publ. New York. 253 pp

<sup>3</sup>STEBBINS, R.C. 1966. A field guide to western reptiles and amphibians. Houghton Mifflin Co., Boston. 279 pp



*Leopard Frog*

*W.B. Preston*

# BREEDING RANGE EXTENSION OF THE LARK SPARROW INTO WEST-CENTRAL MANITOBA

WILLIAM J. WALLEY, 19 Edgar Avenue, Dauphin, Manitoba. R7N 0R4

In Manitoba the Lark Sparrow is known to breed in the southern portion of the province to about 50° N latitude. Breeding records have been reported for Oak Lake, Treesbank and Winnipeg<sup>1 3</sup> and more recently for the Carberry-Shilo area (Table 1).

From 1971 to 1984 Lark Sparrow sightings and nestings were recorded north of their previously known breeding range, by the author and other naturalists at Birtle, Dauphin and in Riding Mountain National Park. The breeding records extend the formerly known breeding range of the species approximately 125 km north in the province (Fig. 1).

### Early Spring and Other Sight Records

According to Baepler early dates of spring arrival for Manitoba are 28 April at Margaret and 6 May at Treesbank; the average date at



Lark Sparrow

W.J. Walley

Table 1. ADDITIONAL NESTING RECORDS OF THE LARK SPARROW IN ITS PREVIOUSLY KNOWN BREEDING RANGE IN MANITOBA

Year	Location	Dates: Eggs/Young	Observer
1966	near Shilo	2 July - 3 eggs	John Lane and the Junior Birders+
		7 July - 2 infertile eggs plus 1 young	
		14 July - 1 young	
		15 July - Nest empty	
1969	near Carberry	22 June - 1 egg, plus 2 young	Norman Cleveland+
1980	13 km W of Carberry	21 June - 4 young	Mamie McCowan+

+Prairie Nest Records Scheme. Manitoba Museum of Man and Nature, Winnipeg.



Treesbank over a 19-year period was 14 May<sup>1</sup> (as documented by the Criddles). Cleveland et al report that the Lark Sparrow is rarely sighted in the last half of April in southeastern Manitoba. More recent spring arrival

dates for the area north of Riding Mountain National Park include the following: one adult in the Dauphin cemetery 19 April 1981 and at least one there 30 April 1978 (W.L. Clark, pers. comm.). The following day, 1

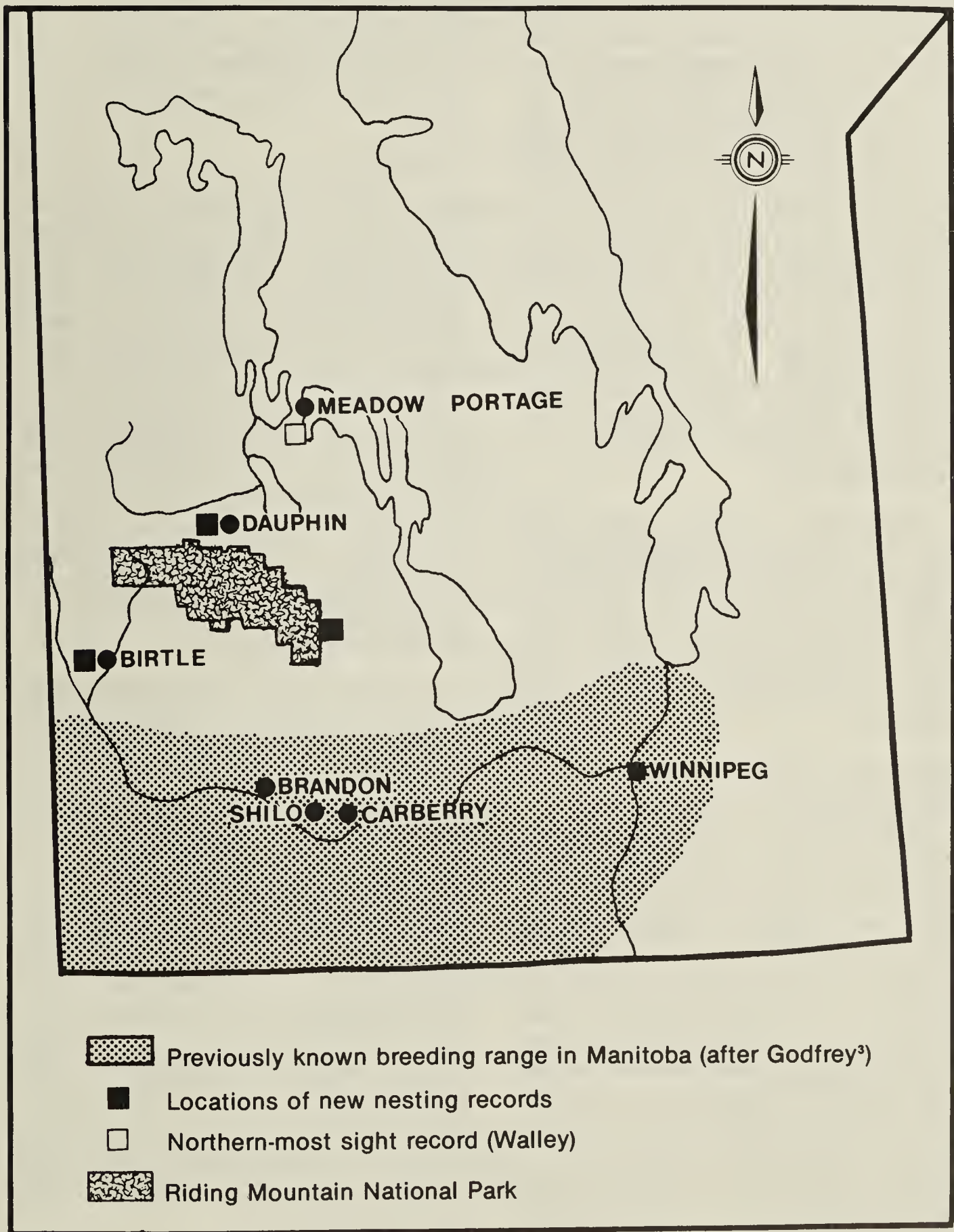


Figure 1. *New breeding and sight records of the Lark Sparrow in west-central Manitoba.*

May, I observed a Lark Sparrow in the cemetery. My most northerly sighting was of at least three Lark Sparrows in migration 19 May 1974 just south of the village of Meadow Portage (51° 40' N and 99° 50' W) between lakes Winnipegosis and Manitoba. The birds were associating with White-throated, White-crowned and Harris' Sparrows during a rain. This observation was at the same latitude as Lake St. Martin which is the northern limit of the species' known occurrence in Manitoba.<sup>1 3</sup> My late fall record was a single bird on swathed grain south of Dauphin on 22 August 1971 (also my first record). The late date of fall departure reported from Manitoba is 11 September at Treesbank.<sup>1</sup> In eastern Manitoba the species is uncommon to about 10 August, but there is one out-of-season record in mid-September.<sup>2</sup>

Additional records, other than nesting, include sightings at Birtle in the summers of 1975 and 1976 (Edgar Dandridge, pers. comm.) and single bird sightings 21 May 1979 in Vermillion Park, Dauphin and 18 May 1981 at the north end of Lake Dauphin.

#### **Breeding Records, Habitat and Nest Site Selection**

On 6 June 1971 Park Warden R.T. Dowhan found a Lark Sparrow nest with 3 eggs 0.3 km west of the east gate near Highway 19 in Riding Mountain National Park (Prairie Nest Records Scheme). On 16 June the nest still contained 3 eggs, but was empty on 19 June. The nesting had occurred in a horse pasture with a few browsed and stunted shrubs surrounded by elm, oak, maple, ash and aspen forest. The nest was located in sparse grass on broken shale substrate with a 60 cm, 3-stemmed sapling White Birch nearby.

Edgar Dandridge found a nest with

3 eggs at Birtle (50° 25' N, 101° 10' W) on 28 June, 1974. At the top of a ravine opening on the north crest of the Birdtail Valley, the nest was in sparse snowberry on a well grazed pasture adjacent to a stand of Bur Oak. Dandridge had observed a Lark Sparrow feeding two young and a cowbird, all capable of flight, in the same area the previous summer, 1973.

In late spring 1973 Joan Wells reported that Lark Sparrows had successfully nested at the southwest edge of Dauphin (51° 05' N, 100° 05' W) (pers. comm.). The birds built their nest among potato plants of a market garden only a few meters from hardwood deciduous forest along the Vermillion River. Nesting attempts in the same area in 1975 failed (Wells, pers. comm.). On 18 May the sparrows were seen building a nest between two furrows on a black field with no vegetation in the vicinity! On 26 May the nest contained two eggs and several small chunks of black soil - obviously abandoned.

In the spring of 1977 efforts were made to determine the breeding status of Lark Sparrow at Dauphin. At the Dauphin cemetery, 0.5 km south of where Wells had made observations, four nests were located. In addition to tomb-stones, there were scattered hardwood trees with a solid hardwood forest adjacent to the west side of the cemetery. One nest was found in the cemetery in 1979. Another locality in the Dauphin area where Lark Sparrows have been found nesting has been at the Carmichael farm about 13 km south-southeast of Dauphin (just north of Riding Mountain National Park) where nests were successful in 1983 and 1984 (Table 2).

At Carmichael's on 18 June 1984 Lark Sparrows were found in the



Table 2. BREEDING EVIDENCE OF THE LARK SPARROW NORTH OF ITS PREVIOUSLY KNOWN RANGE IN MANITOBA

<i>Year</i>	<i>Location</i>	<i>Dates: Eggs/Young</i>	<i>Success*</i>	<i>Observer</i>
1971	east gate, Riding Mt. National Park (Hwy. 19)	6 June - 3 eggs 16 June - 3 eggs 19 June - nest empty	failed	Dowhan <sup>a</sup>
1973	southwest edge of Dauphin	3 young fledged	successful	Wells
1973	Birtle	2 young and a cowbird being fed by an adult	successful	Dandridge
1974	Birtle	28 June - 3 eggs	failed	Dandridge
1975	southwest edge of Dauphin	18 May - nest building 26 May - 2 eggs (abandoned)	failed	Wells
1975	southwest edge of Dauphin	second nesting attempt of the 26 May pair (above)	failed	Wells
1977	Dauphin Cemetery	21 May - 4 eggs 24 May - 4 eggs 7 June - young fledged (feather scales)	successful	Walley
1977	Dauphin Cemetery	21 May - female on nest 25 May - 3 young, 2-3 days old 26 May - nest empty	failed	Walley
1977	Dauphin Cemetery	26 May - 3 eggs 28 May - parasitized by Brown-headed Cowbird and deserted	failed	Walley
1977	Dauphin Cemetery	7 June - 4 eggs 18 June - 3 young 29 June - nest empty feather scales	successful	Walley
1979	Dauphin Cemetery	21 May - building nest 28 May - 3 eggs plus four cowbird eggs (abandoned)	failed	Walley
1983	Dauphin Cemetery	About 1 July - 4 young fledged	successful	Grounds-keepers
1983	Carmichael Farm 13 km sse of Dauphin	13 July - 3 eggs 16 July - 3 eggs 20 July - 3 young about 2 days old 23 July - 3 young 27 July - young gone - feather scales	successful	Walley

Table 2. BREEDING EVIDENCE OF THE LARK SPARROW NORTH OF ITS PREVIOUSLY KNOWN RANGE IN MANITOBA (continued)

Year	Location	Dates: Eggs/Young	Success*	Observer
1984	Carmichael Farm	18 June - adults carrying food to fledged young perched in nearby trees	successful	Walley
1984	Carmichael Farm	30 June - 4 eggs 10 July - nest empty	failed	Walley

\* At least one young fledged.  
a Prairie Nest Records Scheme, Manitoba Museum of Man and Nature, Winnipeg

same area where they had nested the previous summer. Alarmed, food-carrying adults were seen with immatures perched in nearby trees. In the same area on 30 June a well-concealed nest with four eggs was discovered in a small patch of cone-flower (*Rudbeckia laciniata*) in early growth form.

The habitat was well-drained, well-grazed pasture with many small clumps of short, broad-leaved plants, notably the Early Coneflower. The Lark Sparrows nested where a few American Elm, Green Ash and Bur Oak were scattered near aspen forest with a few maples and ash which formed the south boundary of the pasture.

In New Mexico and Oklahoma Lark Sparrows build nests in shrubs and trees as well as on the ground. One nest was located 7.5 m above the ground.<sup>1</sup> As in Wyoming, all nests reported in this study were on the ground.<sup>1</sup> Lark Sparrows have a marked tendency to nest in shade, such as that provided by a tuft of grass or broad-leaved plants. At the Dauphin cemetery in 1977 mowers did not pass between the closely-spaced tombstones in one area; a narrow strip of uncut grass grew between the south end of one tombstone and the north end of the next. The four nests found that year were abutted

against the north sides of the concrete bases of the tombstones where maximum shade could be obtained (Fig. 2). In the cold, late spring of 1979 grass was very short. Lark Sparrows built a nest in another area of the cemetery on the west side of a flat headstone which was almost flush with the ground. On 28 May a nest being built on 21 May was found to be immediately beneath the green plastic leaves of an artificial flower! The selection of this nest site, while shunning the superior shade of the tombstones used by the 1977 pairs, suggests that the birds had chosen a site which provided a measure of both shade and cover from predators.

Colonial Nesting

Lark Sparrows are reputed to be highly pugnacious during the establishment of territory, but paradoxically, nest in loose colonies with aggressiveness towards other members of the species and other birds declining markedly after incubation begins.<sup>1</sup> At the Dauphin cemetery 21 May, 1979, two Lark Sparrows were observed quietly perched less than a metre apart on a limb of Bur Oak with a Chipping Sparrow perched between them! A third Lark Sparrow stood on a nearby road. No aggression between any of the birds was noted. The nesting stage of these birds was unknown although





Figure 2. *Lark Sparrow* nests found in Dauphin cemetery in 1977. Note the single straight side of each nest where it abutted against a tombstone.

it was the same day that the pair was found building their nest under an artificial plant some distance away. Incubation had not begun in this nest, but the social disposition of this pair towards other birds was unknown. Of the four nests found in the cemetery in 1977, three would fit within a 50 m radius circle with the fourth nest only about 80 m away. In Oklahoma seven nests were found even closer together.<sup>1</sup>

#### **Nest Parasitism**

Baepler discovered that if nests were parasitized by Brown-headed Cowbirds early in incubation nest desertion occurred.<sup>1</sup> However he obtained evidence suggesting that cowbird eggs would be tolerated if laid in the late stages of incubation or later in the season after the birds had experienced one or more nesting failures. Of the nestings reported in Table 2, both nests with cowbird



eggs — one in 1977 and one in 1979 — were abandoned with none of the the cowbird or sparrow eggs showing any discernible embryo development. Interestingly, the 1973 observation by Dandridge at Birtle involved a Lark Sparrow feeding two sparrow young and one cowbird (pers. comm.). Unfortunately the date of this sighting was not recorded.

### Broods

Lark Sparrows raise only one brood near the northern fringe of their geographical range, whereas at least two broods are raised farther south.<sup>1</sup> It is tempting to speculate that two broods may have been raised at the Carmichael farm at Dauphin in 1984. On 18 June adults were seen carrying food and giving alarm notes as fledged immatures perched in nearby trees. At the same site a nest with four eggs was found on 30 June. This nest had failed when checked 10 July. Thus no information was obtained as to when the eggs in the 30 June nest had been laid. Nests with young have been found at Dauphin as early as 25 May (1977), in mid-June and as late as 23 July (1983). It seems that the species could raise two broods in one season in this area. However the late nesting 30 June could have

been a second attempt by a different pair of birds, as could have been the case with the 13-23 July 1983 nesting (Table 2).

### Acknowledgements

I wish to thank Herbert W.R. Copland, Manitoba Museum of Man and Nature, for furnishing copies of Lark Sparrow nest records from the Prairie Nest Records Scheme. Robert MacKenzie of the Manitoba Dept. of Natural Resources provided the base map. Edgar Dandridge and Joan Wells provided information on nests at Birtle and Dauphin, respectively.

<sup>1</sup>BAEPLER, D.H. 1968. *In*: Bent, A.C. 1968. Life histories of North American cardinals, grosbeaks, buntings, towhees, finches, sparrows, and allies. Part Two. Dover Publications, New York.

<sup>2</sup>CLEVELAND, N.J., C.W. CUTHBERT, G.D. GRIEF, G.E. HOLLAND, P.A. HORCH, R.W. KNAPTON, R.F. KOES, N.F. MURDOCH, W.P. NEILY and I.A. WARD. 1980. Birder's guide to south-eastern Manitoba. Eco Series No. 1. Manitoba Naturalists Society, Winnipeg. 58 pp.

<sup>3</sup>GODFREY, W.E. 1966. The birds of Canada. Natl. Mus. Can. Bull. 203. Ottawa. 428 pp.



*Nesting habitat of Lark Sparrows on north crest of the Birdtail Valley at Birtle*  
W.J. Walley



# 43rd ANNUAL SASKATCHEWAN CHRISTMAS BIRD COUNT — 1984

Compiled by MARY I. HOUSTON, 863 University Drive, Saskatoon,  
Saskatchewan. S7N 0J8

On 15 December, a group of avid Christmas Bird Counters who converge annually on the Fort Walsh area regardless of weather conditions (this year they had to combat strong winds as well as low temperatures and deep snow) was amply rewarded by sighting a phenomenal 39 species. Furthermore, this included a Screech-Owl (not identified whether Eastern or Western; the Screech Owl has recently been divided into two species) and a Turkey Vulture. Both species are new additions to the all time list of Saskatchewan Christmas Count birds. The all time total now stands at 139 species seen on count days with 6 additional species seen during count periods but not on

count days. Following Ft. Walsh with its 39 species plus 2 additional in count period, Saskatoon had 34 plus 2, Regina had 26 plus 3 and Squaw Rapids 26.

Counts were reported from 68 localities throughout the province, with 73 species seen on count days and 5 additional species during count period. Only in 1977 did as many localities participate in counts.

A Varied Thrush was seen during count period at Fort Qu'Appelle. This species has only once previously been reported, when it was seen also in count period at Pierce Lake in 1978.



*Redpolls*

*Juhachi Asai*

LOCATIONS OF COUNTS

1. ARDATH—OUTLOOK

2. ASSINIBOIA

3. BANGOR

4. BANGOR

5. BIGGAR

6. BIRCH HILLS

7. BROADVIEW

8. CORONACH

9. CROOKED LAKE

10. CYPRESS HILLS PARK

11. DALMENY

12. DILKE

13. DUCK MOUNTAIN PARK

14. DUVAL

15. EASTEND

16. ELBOW

17. ENDEAVOUR

18. ESTEVAN

19. FORT QU'APPELLE

20. FORT WALSH

21. GARDINER DAM

22. GARDINER DAM

23. GLAMIS-WISETON

24. GOODSOIL

25. GOOD SPIRIT LAKE

26. GOVENLOCK

27. GRAND CENTRE-PIERCELAND

28. HERBERT

29. HUMBOLDT

30. INDIAN HEAD

31. KAMSACK

32. KELVINGTON

33. KENASTON

34. KINDERSLEY
35. KUTAWAGAN LAKE

36. LA RONGE

37. LAST MOUNTAIN LAKE

38. LEADER

39. LITTLE BEAR LAKE

40. LOON LAKE

41. LOVE-TORCH RIVER

42. LUSELAND

43. MELFORT

44. MOOSE JAW

45. MUENSTER

46. NIPAWIN

47. NORTH BATTLEFORD

48. PIKE LAKE

49. PRINCE ALBERT NAT. PARK

50. RAVENSCRAG-EASTEND

51. RAYMORE

52. REGINA

53. ROUND LAKE

54. ST. VICTOR

55. SASKATCHEWAN R. FORKS

56. SASKATOON

57. SCOTT

58. SKULL CREEK

59. SOMME

60. SQUAW RAPIDS

61. SWIFT CURRENT

62. TISDALE

63. TISDALE

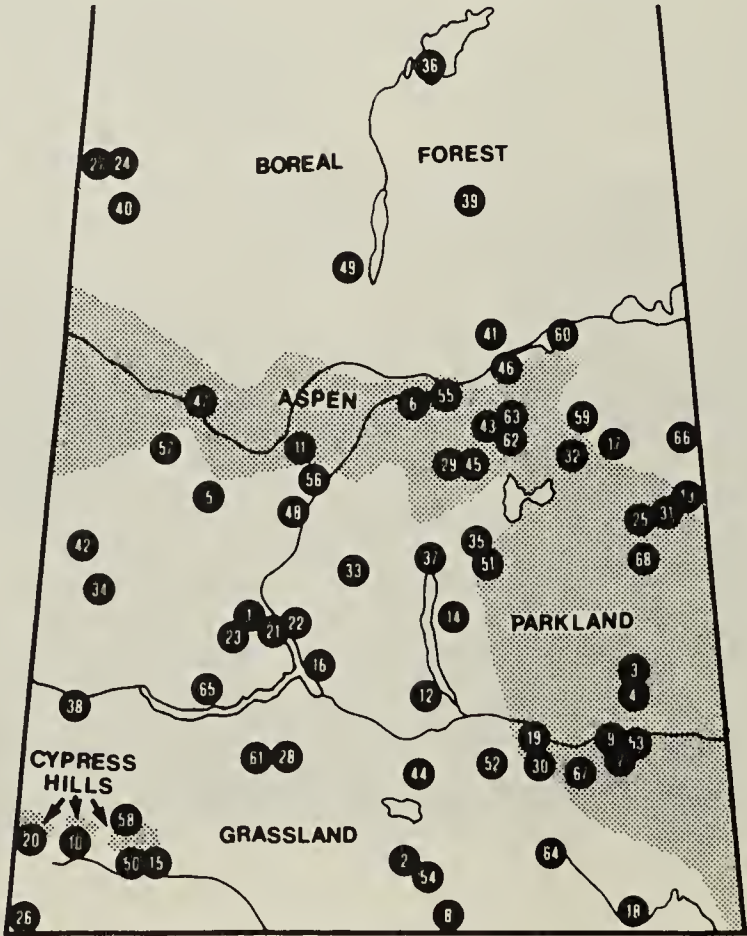
64. WEYBURN

65. WHITE BEAR

66. WHITEBEECH

67. WOLSELEY SOUTH

68. YORKTON





Three Tundra Swans were reported: 2 at Gardiner Dam and 1 at Saskatoon — a first for this locality.

Rosy Finches seemed to extend their range considerably last year — this year they were again found in most of the same areas, but had not extended their range further.

Northern Goshawks, Common and Hoary Redpolls, Gray Partridge, Red-breasted Nuthatches and Northern Shrikes indicated an increase by the number of localities reporting sightings. Bohemian Waxwings and Blue Jays, on the other hand were seen in fewer areas, and the number of Blue Jays seen in Saskatoon was the lowest since 1969.

After the list of participants from the 68 localities, and the map, Table

1 gives the Coverage and the Weather; Table 2 gives species reported in more than 3 locations and gives numbers of each species seen in each locality on count day, with numbers of additional species during count period indicated with a +sign. Table 3 gives numbers and locations of species seen in 3 or fewer locations during count period. Table 4 gives locations and numbers of birds not positively identified as to species.

#### Count Areas and Participants

Names of compilers in italics.

1. ARDATH-OUTLOOK. *Alan R. Smith.*
2. ASSINIBOIA. Ed and Carol Bearss, Gordon Brunt, Jack Burgeson, *Cecil T. Hayward*, Ted



*Northern Shrike*

*Lorne Scott*

- McMorrine, D. Pettem, Wilf Prentice, Ken Schuweiler.
3. BANGOR. George Hilton, *Jean Hilton*.
  4. BANGOR. Mrs. *Katie Thompson*.
  5. BIGGAR. *Guy Wapple*, Robert Wapple.
  6. BIRCH HILLS. Rick Courtney, Moe Mareschal, Terry Teows, *Don Weidl*.
  7. BROADVIEW. *Dave J. Chaskavich*..
  8. CORONACH. Linda Lahey, *Alan R. Smith*.
  9. CROOKED LAKE. Doug Boivin, Terry Toews, *Don Weidl*.
  10. CYPRESS HILLS PROVINCIAL PARK. *Christopher J. Escott*, Harvey Lane, Stan Shadick.
  11. DALMENY. *Loyd Sperling*.
  12. DILKE. *Margaret Belcher*, Ken McArton, B. Wilson.
  13. DUCK MOUNTAIN PROVINCIAL PARK. Ben Escott, *Christopher J. Escott*, Margaret and Bob Graham, Brad Mason and family, Charlie Simpson.
  14. DUVAL. J. Rawdon Bieber, Wayne C. Harris, *Lloyd S. Saul*, Shabbir Zavery.
  15. EASTEND. *Henri Lebastard*.
  16. ELBOW. *Glen Honig*. Ron Jensen.
  17. ENDEAVOUR. *Norman Harris*.
  18. ESTEVAN. Linda Lahey, *Alan R. Smith*.
  19. FORT QU'APPELLE. Dick Barton, *Manley Callin*, Errol Cochrane, Ethel Cockwill, Vic and Peggy Cole, Bernie de Vries, Fulmer Hansen, Ron Hooper, Alice Laing, Lois Lamontagne, Jack Lowe, Alan Mlazgar, John Norman, Enola Rak, Lawrence Robillard, Lorne, Doreen and Shawn Rowell, Bruno Skolski, Thorb and Marg Thompson.
  20. FORT WALSH. Chris Adam, Chris Escott, Sheollagh Fitzgerald, Wayne Harris, Julie Jensen, Ron Jensen, Bob Kreba, Sheila Lamont, Harvey Lane, Ron Myers, Wilkes Parsonage, Stan Shadick, *Guy Wapple*, Robert Wapple.
  21. GARDINER DAM. Wayne Harris, Sheila Lamont, *Guy Wapple*, Robert Wapple.
  22. GARDINER DAM. Nigel Caulkett, Paul and Vi Coutu, *Stan Shadick*, Lois Wooding.
  23. GLAMIS-WISETON. Brian Jones, *Grev Jones*.
  24. GOODSOIL. *Catherine Morton*, David and Richard Morton.
  25. GOOD SPIRIT LAKE. *Bill Anaka*, Joyce Anaka.
  26. GOVENLOCK. Chris Adam, Sheollagh Fitzgerald, *Wayne Harris*, Sheila Lamont, *Guy Wapple*, Robert Wapple.
  27. GRAND CENTRE — PIERCELAND. Kevin Arnold, Dale Dolynny, Bill Kervin, *J. Frank Roy*, Ryan Roy.
  28. HERBERT. Terry Toews, *Don Weidl*,
  29. HUMBOLDT. *Ed Brockmeyer*, Dwayne Saretsky.
  30. INDIAN HEAD. Cec and Betty Ashmore, Vic Beaulieu, Yvonne Brown, Jim Elliott, *Roger Gray*, Mavis Gray, Joan Halford,





*Great Horned Owl, Fort Walsh C.B.C., 1984*

*C.I.G. Adam*

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| <p>Marcella Horseman, Gordon Howe, Janet and Andrew Le Prieur, Rose and Roy McLaughlin, Fred Skinner, Joyce Skinner, Mary Skinner.</p> <p>31. KAMSACK. <i>Isabel Ritchie.</i></p> <p>32. KELVINGTON. <i>Marguerite Sloan.</i></p> <p>33. KENASTON. Gary and Sheila Beckie, Hugh Beckie, JoAnn and Lori Beckie, <i>Lawrence Beckie</i>, Margaret Beckie, Tracy and Stephanie Prpick.</p> <p>34. KINDERSLEY, <i>Gerry Essar</i>, Michael Essar.</p> <p>35. KUTAWAGAN LAKE. <i>Wayne Harris.</i></p> <p>36. LA RONGE. <i>Jim Paul.</i></p> <p>37. LAST MOUNTAIN LAKE. <i>Wayne Harris</i>, Sheila Lamont.</p> <p>38. LEADER. <i>Daisy D. Meyers.</i></p> <p>39. LITTLE BEAR LAKE. Jim</p> | <p>Feather, <i>Joan Feather.</i></p> <p>40. LOON LAKE. <i>P. Davis</i>, T. Dean, F. Scott.</p> <p>41. LOVE-TORCH RIVER. <i>Bert Dalziel</i>, Joan Dalziel, Amy Dixon, Pearl French, Bill Matthews, Lynn Matthews, Lyle Nowlin, Irene Vivian.</p> <p>42. LUSELAND. <i>Kim Finley</i>, Estelle Martfeld, Travis Martfeld.</p> <p>43. MELFORT. <i>Glen Galloway</i>, Ann Kipling, Freda Markland, Marylyn Nickeson, Mary Smith.</p> <p>44. MOOSE JAW. Edith Bell, Eileen Bozyk, Carl Ellis, Doug Francis, Arthur, Edward, Hartley and Lawrence Fredeen, Ruth Hilling, Edith, John and Pat Kern, Eve King, Cy Knight, <i>Leith Knight</i>, Jim Kroshus, Arie and Henry Van Dorland, Sheina Wait, Gus Zado.</p> <p>45. MUENSTER. Linda Lahey, <i>Alan R. Smith.</i></p> |
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46. NIPAWIN. *Harvey and Joyce Christiansen.*
47. NORTH BATTLEFORD. *Shirley Martin.*
48. PIKE LAKE. Chris Escott, Colleen Gerwing, Mary Gilliland, Jane Gollop, *J.B. Gollop*, Mike Gollop, Frank Roy, Jim Wedgwood, Lois Wooding.
49. PRINCE ALBERT NATIONAL PARK. Jean Anions, Brent and Trevor Baker, Chris and Travis Doupe, David and Suzanne Henry, Greg and Scott Keeseey, *Ann Landry*, Brad and June Muir, Marilyn and Merv Syroteuk.
50. RAVENSCRAG-EASTEND. *Christopher J. Escott*, Harvey Lane, Stan Shadick.
51. RAYMORE. Anemone Harris, *Wayne Harris*, Sheila Lamont, Lloyd Saul.
52. REGINA. Margaret Belcher, Frank Brazier, Bob Ewart, Sandra Ewart, Elmer Fox, Bob Godwin, Dale Hjertaas, *Robert Kreba*, John MacDonald, Kathy Meeres, Len Meeres, Ron Myers, Irene Pierson, Tom Rifel, Pierre Wilhelm.
53. ROUND LAKE. *Doug Francis*, Laura and Joe Grimeau, Pat Kern, Helen O'Flynn, Joyce and Leo Trembley, Jean Waddell.
54. ST. VICTOR. Linda Lahey, *Alan R. Smith.*
55. SASKATCHEWAN RIVER FORKS. Terry Toews, *Don Weidl.*
56. SASKATOON. Bill and Betty Albritton, Bob and Garth Bessant, Eveline Boudreau, Nigel Caulkett, Paul Coutu, Chris Escott, Barry Evenson, John and Betty Gerrard, Colleen Gerwing, Mary Gilliland, Bernie Gollop, John Hanbidge, *Stuart and Mary Houston*, Dick Kerbes, Louise Klaasen, Donna Malcolm, Bert McBride, Jo McRobbie, Sean Morrissey, Betty Mundy, Dan Neves, Menno Nickel, Jim and Pat O'Neil, Sarah Parker, John Polson, Jim Slimmon, Alan Smith, Lois Wooding.
57. SCOTT. *Guy Wapple*, Robert Wapple.,
58. SKULL CREEK. *J. Bennetto*, Marina Schuler.
59. SOMME. Margaret Back, Stan Back, Edwin Billeter, Shirley Billeter, Ian Birch, Myrla Birch, David Black, Florence Chase, *Donald Hooper*, Eldon Hooper.
60. SQUAW RAPIDS. *Wayne Harris*, Sheila Lamont, Guy Wapple, Robert Wapple.
61. SWIFT CURRENT. *Catherine Dumouchel*, Stan Greenwood, Jack Ricou, Russell Wall.
62. TISDALE. *Jenny Fritshaw.*
63. TISDALE. *Joyce Mohr.*
64. WEYBURN. Leo Belanger, *Ray Belanger*, Jim Kaz, Nick Postey, Ron Rumball.
65. WHITE BEAR. *Sig Jordheim.*
66. WHITEBEECH. Clayton Borley, Ida Wotherspoon, *Lindsay Wotherspoon.*
67. WOLSELEY. *Dale Chay*, Donald Hayward.
68. YORKTON. Joyce Baines, *Joe Bergerman*, Warren Hjertaas, Lance Irvine, Ben Kruser, Lorne and Marilyn Lepp, Cherry Mockler, JoAnn Radish, Birkett Satterthwaite, Harold Wilkinson.



Table 1. CHRISTMAS COUNT COVERAGE AND WEATHER CONDITIONS

LOCALITY	COVERAGE AND CONDITIONS	KILOMETERS BY VEHICLE	KILOMETERS ON FOOT OR SKIS	HOURS BY VEHICLE	HOURS ON FOOT OR SKIS	HOURS WATCHING FEEDERS OR OWLING	TEMPERATURE RANGE ( ° C)	WIND SPEED (KM/HR)	SNOW DEPTH (CM)	SKY CONDITIONS
ARDATH - OUTLOOK		120	2	6.5	1	-	-22/-26	0-10	0-10	clear
ASSINIBOIA		40	-	2	-	-	-10/+1	6-10	10	mostly cloudy
BANGOR		-	-	-	-	5	-	-	-	
BANGOR		-	-	-	-	5	-28	0	20-40	clear
BIGGAR		175	7	9.5	3.5	-	-33/-26	5-40	5-20	mostly cloudy
BIRCH HILLS		171	2	4.5	1	1	-31/-27	10-20	35-60	mostly clear
BROADVIEW		78	6	3.5	3	-	-18/-5	0-24	30-90	clear
CORONACH		105	1	4.5	.5	-	-20/-22	5-30	0-5	overcast
CROOKED LAKE		115	2	5	.8	-	-28/-23	10-15	40-70	overcast, clearing
CYPRESS HILLS P.P.		40	4	2	1	-	-20/-25	30-50	5-60	overcast, light snow
DALMENY		13	13	.3	3.3	-	-10/-4	22-24	10-99	partly cloudy
DILKE		85	7	5	2.3	1	-21/-27	8-35	1-15	mostly clear
DUCK MOUNTAIN P.P.		64	1	8	1	6	-37/-32	0-40	30-90	
DUVAL		224	3	9	1.8	-	-33/-36	5-17	5-65	mostly clear; clouding
EASTEND		18	3	-	2	-	-22	-	-	
ELBOW		62	4	4	1.5	-	-24/-28	30	10-18	partly cloudy
ENDEAVOUR		-	2	-	4	-	-40/-26	0-5	40-45	clear
ESTEVAN		100	5	6	1.5	-	-10/-5	0-40	10-20	mostly clear
FORT QU'APPELLE		245	-	12	-	4	-32/-30	16	38	mostly clear
FORT WALSH		241	68	23.5	21	2	-20/-10	0-60	10-60	mostly cloudy
GARDINER DAM		222	10	4.5	5	-	-29/-25	0-10	5-15	mostly clear
GARDINER DAM		65	2	4	2	-	-31/-25	7-30	15	partly cloudy
GLAMIS - WISETON		40	3.5	1	2	-	-25/-27	0-4	40-75	overcast; fog
GOODSOIL		60	5	1.5	2	7	-35/-30	5-10	10-15	overcast
GOOD SPIRIT LAKE		96	2	5	1	2	-35/-27	10-15	15-40	mostly clear
GOVENLOCK		206	13	16	6	-	-20/-17	30	3-5	overcast, light snow
GRAND CENTRE		104	3	4	2	-	-28/-29	17-0	40-45	partly cloudy; clearing
HERBERT		182	-	6.5	-	-	-24/-26	10-15	15-20	overcast; clearing
HUMBOLDT		40	5	2.5	2	2	-20/-25	5-10	35-40	overcast
INDIAN HEAD		40	4	6	1	10	-2/+2	10-40	80-99	clear
KAMSACK		-	-	3	-	-	-35/-28	0-10	50	clear
KELVINGTON		-	-	-	-	-	-20/-35	-	30-35	
KENASTON		100	-	2	-	-	-10/-27	0	20-30	mostly clear
KINDERSLEY		64	-	2.5	-	-	-6	0	-	
KUTAWAGAN LAKE		227	7	6.6	2	-	-32/-26	30-50	20-30	clear
LA RONGE		152	10	5.5	2	.5	-41/-33	0-7	45-60	mostly clear; clouding
LAST MOUNTAIN LAKE		175	5	7	2	-	-20/-2	3-50	25-30	clear; clouding
LEADER		60	5	2	2	-	-28/-12	0-10	12-40	mostly clear
LITTLE BEAR LAKE		20	2	1	1.5	-	-38/-35	10-20	45-75	clear
LOON LAKE		-	2	-	1	5	-16/-5	0-5	5-20	partly cloudy; clearing
LOVE - TORCH RIVER		60	-	3.5	-	2	-20/-25	5-10	45-60	clear; clouding
LUSELAND		92	12.5	4	2.5	-	-4/+1	10-15	8-45	
MELFORT		30	4	2	3	8	-15/-5	15-20	30-90	
MOOSE JAW		100	10.5	6.5	5	2	-15/-19	30-40	8-23	overcast; moderate snow
MUENSTER		70	3	4.5	1.5	-	-15/-20	20-30	10-30	overcast
NIPAWIN		-	-	-	-	6	-	-	-	
NORTH BATTLEFORD		-	-	-	-	-	-	-	-	
PIKE LAKE		90	22.3	9.3	7.5	1	-37/-34	7-17	6-10	mostly clear
P.A. NATIONAL PARK		109	20.5	4.3	12	11.5	-19/-7	18-22	25-36	heavy to moderate snow
RAVENSCRAG-EASTEND		83	6	2	3	-	-20/-25	20-40	5-30	partly cloudy; light snow
RAYMORE		315	13	10	7	2	-35/-26	0	45-60	clear
REGINA		301	26.5	12.3	11.5	-	-36/-30	10-20	10-45	partly cloudy
ROUND LAKE		95	.5	6	.5	8	-8/-10	0-5	15-60	clear
ST. VICTOR		115	5	6	2	-	-20/-25	10-20	5-15	overcast
SASK. RIVER FORKS		49	3	2	2	-	-24/-5	0-25	50-70	clear; clouding
SASKATOON		380	60	46.5	38.3	11	-18/-24	5-40	20-25	cloudy, light snow
SCOTT		202	6.5	8.3	3.3	-	-14/-5	10-30	10-40	partly cloudy
SKULL CREEK		6	3	2	2	-	-25	10-15	6-10	
SOMME		108	9	6	3	12	-10/-15	10-30	25-45	mostly cloudy
SQUAW RAPIDS		80	30	12	10	-	-35/-38	30-70	45-60	clear
SWIFT CURRENT		236.5	6.5	10.3	1.3	-	-27/-25	10	2-15	moderate snow
TISDALE		-	-	-	-	7	-16/-26	-	-	cloudy; clearing
TISDALE		75	-	2	-	-	-30/-25	15-20	15-20	mostly clear
WEYBURN		120	7.5	5	1.5	-	-23/-26	10-25	0-6	clear
WHITE BEAR		52	12	.6	3.5	-	-2/0	0-10	6-60	clear
WHITEBEECH		20	2	1	1	6	-26/-30	10-20	40-50	mostly clear
WOLSELEY SOUTH		-	1	1.5	1	-	-25/-26	5-20	10-50	mostly clear
YORKTON		105	5	2	2	.5	-30	7	29	clear

Table 2-1. SPECIES RECORDED FROM MORE THAN THREE LOCALITIES. A PLUS SIGN INDICATES A HIGH COUNT FOR A SPECIES SEEN DURING COUNT PERIOD BUT NOT ON COUNT DAY

SPECIES	LOCALITY	ARDATH-OUTLOOK December 17	ASSINIBOIA January 3	BANGOR December 21	BANGOR December 22	BIGGAR December 22	BIRCH HILLS December 22	BROADVIEW January 2	CORONACH December 21	CROOKED LAKE December 31	CYPRESS HILLS P.P. December 16
MALLARD									24		
COMMON GOLDENEYE									3		
COMMON MERGANSER											
BALD EAGLE											
NORTHERN GOSHAWK						1	1	1		1	+1
GOLDEN EAGLE											
MERLIN						1					+1
GYRFALCON				1							
PRAIRIE FALCON											
GRAY PARTRIDGE		29	73	8		26	7	18	6	8	
RING-NECKED PHEASANT			6								+4
SPRUCE GROUSE											
RUFFED GROUSE				1				4			
SHARP-TAILED GROUSE		70	2	+3	+2	65	1	44	38	4	+7
ROCK DOVE		48				28	85			11	+25
GREAT HORNED OWL			3	+1		+1	1	1			+1
SNOWY OWL		2	1								
DOWNY WOODPECKER		1		2	2	2	5	2		5	+1
HAIRY WOODPECKER				2	1	1	+1	1		1	1
THREE-TOED WOODPECKER											
PILEATED WOODPECKER											
HORNED LARK								1	37		
GRAY JAY					1						
BLUE JAY							8			3	
BLACK-BILLED MAGPIE		45	9	+4	2	49	52	16	2	30	10
COMMON RAVEN		4				+1	19				+1
BLACK-CAPPED CHICKADEE		1		12	5	17	26	9		19	13
BOREAL CHICKADEE											
RED-BREASTED NUTHATCH		1				1					+1
WHITE-BREASTED NUTHATCH											
AMERICAN ROBIN											
BOHEMIAN WAXWING			4			36	7	+1			2
NORTHERN SHRIKE											
EUROPEAN STARLING						2	4				
DARK-EYED JUNCO											
LAPLAND LONGSPUR									2		
SNOW BUNTING		53	5	80	+20	187	320	68	2004	25	1
RED-WINGED BLACKBIRD											
RUSTY BLACKBIRD											
ROSY FINCH									2		80
PINE GROSBEAK					2	12	+11	2		9	
RED CROSSBILL											+7
WHITE-WINGED CROSSBILL		1				5					
COMMON REDPOLL			30			213	27				1
HOARY REDPOLL						43			2		+2
EVENING GROSBEAK						2	16			3	
HOUSE SPARROW		125	450	+8	8	612	80	24	32	8	
NO. SPECIES IN TABLES 3 & 4		2	0	0	0	1	0	0	2	0	0
NO. COUNT DAY SPECIES		14	10	7	7	19	16	13	12	13	7
NO. COUNT PERIOD SPECIES		14	10	11	9	21	18	14	12	13	18
NO. COUNT DAY INDIVIDUALS		488	583	106	21	1348	659	191	2305	127	108



Table 2-2. SPECIES RECORDED FROM MORE THAN THREE LOCALITIES. A PLUS SIGN INDICATES A HIGH COUNT FOR A SPECIES SEEN DURING COUNT PERIOD BUT NOT ON COUNT DAY

DALMENY January 2	DILKE December 31	DUCK MOUNTAIN P.P. December 23	DUVAL December 29	EASTEND December 31	ELBOW December 22	ENDEAVOUR December 25	ESTEVAN December 20	FORT QU' APPELLE December 29	FORT WALSH December 15	LOCALITY  SPECIES
					202		214	43	+7	MALLARD
					9		9	2	1	COMMON GOLDENEYE
										COMMON MERGANSER
									1	BALD EAGLE
+1		1				+1		+1	2	NORTHERN GOSHAWK
				+1	1				3	GOLDEN EAGLE
	1								1	MERLIN
								1		GYRFALCON
				+1					1	PRAIRIE FALCON
1	18		73	6	9			+12	6	GRAY PARTRIDGE
				5				7	1	RING-NECKED PHEASANT
										SPRUCE GROUSE
		+1							2	RUFFED GROUSE
+4	11		9	2	14	+9	16	8	4	SHARP-TAILED GROUSE
	+3	16	10		8		18	3	3	ROCK DOVE
1	3		2			+1		+1	5	GREAT HORNED OWL
			2	+1	1	+1		2	1	SNOWY OWL
		3	1	2		1		5	4	DOWNY WOODPECKER
2	+1	1		2		+1	1	7	4	HAIRY WOODPECKER
								+1	1	THREE-TOED WOODPECKER
		+1								PILEATED WOODPECKER
	6			4					2	HORNED LARK
		5						1		GRAY JAY
		6						7		BLUE JAY
2	23	23	24	50	3	+3	6	20	202	BLACK-BILLED MAGPIE
		31			1	21			2	COMMON RAVEN
7	2	14	1	8		4	17	67	64	BLACK-CAPPED CHICKADEE
		3								BOREAL CHICKADEE
		+1						1	9	RED-BREASTED NUTHATCH
		1					1	4		WHITE-BREASTED NUTHATCH
								+1		AMERICAN ROBIN
+1				+50			7	+1	28	BOHEMIAN WAXWING
		1	1			+1		+1	1	NORTHERN SHRIKE
										EUROPEAN STARLING
				+1					3	DARK-EYED JUNCO
										LAPLAND LONGSPUR
30	125	35	380			90		215	200	SNOW BUNTING
								+2	1	RED-WINGED BLACKBIRD
									17	RUSTY BLACKBIRD
									143	ROSY FINCH
						5		12	27	PINE GROSBEAK
									3	RED CROSSBILL
		11								WHITE-WINGED CROSSBILL
	114		262					89	15	COMMON REDPOLL
	2		2				1	4	3	HOARY REDPOLL
		13						30	19	EVENING GROSBEAK
25	170	26	314		50	7	32	272	85	HOUSE SPARROW
0	0	0	0	0	0	0	4	3	8	NO. SPECIES IN TABLES 3 & 4
7	11	16	13	8	10	6	14	22	39	NO. COUNT DAY SPECIES
10	13	19	13	13	10	13	14	32	41	NO. COUNT PERIOD SPECIES
68	475	190	1081	79	298	128	348	801	882	NO. COUNT DAY INDIVIDUALS

Table 2-3. SPECIES RECORDED FROM MORE THAN THREE LOCALITIES. A PLUS SIGN INDICATES A HIGH COUNT FOR A SPECIES SEEN DURING COUNT PERIOD BUT NOT ON COUNT DAY

SPECIES	LOCALITY	GARDINER DAM December 17	GARDINER DAM December 22	GLAMIS-WISETON December 27	GOODSOIL December 29	GOOD SPIRIT LAKE December 31	GOVENLOCK December 16	GRAND CENTRE December 26	HERBERT December 27	HUMBOLDT December 27	INDIAN HEAD January 2
MALLARD		130	95								
COMMON GOLDENEYE		9	5		+2						
COMMON MERGANSER		40	15								
BALD EAGLE		4	2				1				2
NORTHERN GOSHAWK						+1					
GOLDEN EAGLE		1	1				3		1		
MERLIN											5
GYRFALCON			1								
PRAIRIE FALCON		1							1		
GRAY PARTRIDGE		225	95	24		3	22		104	10	42
RING-NECKED PHEASANT							1				
SPRUCE GROUSE											
RUFFED GROUSE					+3	+1					5
SHARP-TAILED GROUSE		20		1		3	1			4	102
ROCK DOVE		85	37	10				17	1		13
GREAT HORNED OWL		5	2	1		1	4		1	+1	4
SNOWY OWL		5		5		1	2				1
DOWNY WOODPECKER		2			4	9				4	11
HAIRY WOODPECKER					4	6		1		2	10
THREE-TOED WOODPECKER								2			
PILEATED WOODPECKER					+1			1			
HORNED LARK		3					78		116		6
GRAY JAY					2	2		3			
BLUE JAY					4	4		3			2
BLACK-BILLED MAGPIE		111	10	1	10	39	8	13	13	6	35
COMMON RAVEN					6	13		29		+1	
BLACK-CAPPED CHICKADEE		3			8	32		7		12	39
BOREAL CHICKADEE											
RED-BREASTED NUTHATCH											3
WHITE-BREASTED NUTHATCH						2					4
AMERICAN ROBIN							1				
BOHEMIAN WAXWING		12	1					2		6	28
NORTHERN SHRIKE			1			1	1	1			
EUROPEAN STARLING					+5			10			
DARK-EYED JUNCO											+2
LAPLAND LONGSPUR							4				
SNOW BUNTING		3845	12		50	18	4405		3115	+23	515
RED-WINGED BLACKBIRD							1				
RUSTY BLACKBIRD							3				
ROSY FINCH							8				
PINE GROSBEAK		1				+2				+9	3
RED CROSSBILL											
WHITE-WINGED CROSSBILL											
COMMON REDPOLL		106	24				181		411		3
HOARY REDPOLL		37	3				6				
EVENING GROSBEAK					30	2		25			1
HOUSE SPARROW		2117	341	50		52	1278	11	236	25	1127
NO. SPECIES IN TABLES 3 & 4		3	1	0	0	0	3	0	0	0	1
NO. COUNT DAY SPECIES		23	17	7	9	16	20	14	10	8	23
NO. COUNT PERIOD SPECIES		24	17	7	13	19	21	14	10	12	24
NO. COUNT DAY INDIVIDUALS		6764	646	92	118	188	6014	125	3999	69	1999



Table 2-4. SPECIES RECORDED FROM MORE THAN THREE LOCALITIES. A PLUS SIGN INDICATES A HIGH COUNT FOR A SPECIES SEEN DURING COUNT PERIOD BUT NOT ON COUNT DAY

KAMSACK December 31	KELVINGTON January 2	KENASTON January 1	KINDERSLEY January 2	KUTAWAGAN December 31	LA RONGE December 24	LAST MOUNTAIN LAKE January 2	LEADER December 18	LITTLE BEAR LAKE December 24	LOON LAKE January 1	LOCALITY SPECIES
										MALLARD
										COMMON GOLDENEYE
							1			COMMON MERGANSER
										BALD EAGLE
						1				NORTHERN GOSHAWK
										GOLDEN EAGLE
										MERLIN
				1						GYRFALCON
										PRAIRIE FALCON
		10	17	137		87				GRAY PARTRIDGE
							4			RING-NECKED PHEASANT
					+7			2		SPRUCE GROUSE
									1	RUFFED GROUSE
11		31	4	9	23	17				SHARP-TAILED GROUSE
		33		1		63	6			ROCK DOVE
				1		3				GREAT HORNED OWL
		+1	3	4		5	1			SNOWY OWL
	3	+1		1	1				1	DOWNY WOODPECKER
	3				+1				1	HAIRY WOODPECKER
										THREE-TOED WOODPECKER
										PILEATED WOODPECKER
		+7								HORNED LARK
					3			2	2	GRAY JAY
		+1			+3				4	BLUE JAY
5	4	4		28		101	32		1	BLACK-BILLED MAGPIE
7	2				85			1	1	COMMON RAVEN
3	8			2	+8	1			5	BLACK-CAPPED CHICKADEE
					1				4	BOREAL CHICKADEE
										RED-BREASTED NUTHATCH
										WHITE-BREASTED NUTHATCH
12			43				8			AMERICAN ROBIN
										BOHEMIAN WAXWING
										NORTHERN SHRIKE
										EUROPEAN STARLING
2										DARK-EYED JUNCO
100	+1000	18	9	29		411	30			LAPLAND LONGSPUR
										SNOW BUNTING
										RED-WINGED BLACKBIRD
										RUSTY BLACKBIRD
										ROSY FINCH
										PINE GROSBEAK
										RED CROSSBILL
										WHITE-WINGED CROSSBILL
		15	21	9	2	84				COMMON REDPOLL
				4						HOARY REDPOLL
	30								60	EVENING GROSBEAK
25	6	136	23	320		622	6		55	HOUSE SPARROW
0	0	1	0	0	1	0	0	0	0	NO. SPECIES IN TABLES 3 & 4
8	7	8	7	13	7	11	8	3	11	NO. COUNT DAY SPECIES
8	8	12	7	13	11	11	8	3	11	NO. COUNT PERIOD SPECIES
165	56	248	120	546	117	1395	88	5	135	NO. COUNT DAY INDIVIDUALS

Table 2-5. SPECIES RECORDED FROM MORE THAN THREE LOCALITIES. A PLUS SIGN INDICATES A HIGH COUNT FOR A SPECIES SEEN DURING COUNT PERIOD BUT NOT ON COUNT DAY

SPECIES	LOCALITY	LOVE-TORCH RIVER January 1	LUSELAND January 2	MELFORT January 2	MOOSE JAW December 26	MUENSTER January 2	NIPAWIN December 27	NORTH BATTLEFORD December 26	PIKE LAKE December 29	P.A. NATIONAL PARK December 15	RAVENS CRAG-EASTEND December 16
MALLARD											
COMMON GOLDENEYE											
COMMON MERGANSER											
BALD EAGLE											
NORTHERN GOSHAWK									4		1
GOLDEN EAGLE											2
MERLIN					+1						
GYRFALCON											
PRAIRIE FALCON											
GRAY PARTRIDGE			24	2	10			9	12		
RING-NECKED PHEASANT					9						
SPRUCE GROUSE		+1									
RUFFED GROUSE		1		1					4	2	
SHARP-TAILED GROUSE			25			2		1	85		
ROCK DOVE			17	10	200	50			12		
GREAT HORNED OWL			2		+1				1		1
SNOWY OWL			2	1							
DOWNY WOODPECKER		3		1	2		+2	3	15		1
HAIRY WOODPECKER		5	2		1	1	1		8	1	
THREE-TOED WOODPECKER										1	
PILEATED WOODPECKER		+1							1		
HORNED LARK											20
GRAY JAY		+2								2	
BLUE JAY		9		5			+2	3	12		
BLACK-BILLED MAGPIE		11	16	6	22	8	2		108	1	49
COMMON RAVEN		87		3			3	1	3	8	
BLACK-CAPPED CHICKADEE		21	8	11	23	9	8	12	44	23	25
BOREAL CHICKADEE										11	
RED-BREASTED NUTHATCH		+1			2	3	+2			1	4
WHITE-BREASTED NUTHATCH					2					+1	
AMERICAN ROBIN											
BOHEMIAN WAXWING			13	20	23	1			5		20
NORTHERN SHRIKE					+1						1
EUROPEAN STARLING			1		1						
DARK-EYED JUNCO		2			+2				1		
LAPLAND LONGSPUR											1
SNOW BUNTING		5	89	37	254	16		10	137		1501
RED-WINGED BLACKBIRD					+1						
RUSTY BLACKBIRD											4
ROSY FINCH											
PINE GROSBEEK		+15	24	16	+2	8		8	5		2
RED CROSSBILL										3	
WHITE-WINGED CROSSBILL		+4							4	41	24
COMMON REDPOLL			1		241		1		55	6	223
HOARY REDPOLL					25				15		4
EVENING GROSBEEK		13		2			21		15		6
HOUSE SPARROW		57	71	60	80	26		3	64		90
NO. SPECIES IN TABLES 3 & 4		2	0	1	0	1	0	0	1	1	1
NO. COUNT DAY SPECIES		11	14	15	15	11	6	9	22	13	20
NO. COUNT PERIOD SPECIES		19	14	15	21	11	9	9	23	14	20
NO. COUNT DAY INDIVIDUALS		214	295	185	895	125	36	50	610	102	1980



Table 2-6. SPECIES RECORDED FROM MORE THAN THREE LOCALITIES. A PLUS SIGN INDICATES A HIGH COUNT FOR A SPECIES SEEN DURING COUNT PERIOD BUT NOT ON COUNT DAY

RAYMORE January 1	REGINA December 29	ROUND LAKE January 3	ST. VICTOR December 22	SASK. RIVER FORKS January 2	SASKATOON December 26	SCOTT January 2	SKULL CREEK January 2	SOMME December 20	SQUAW RAPIDS December 23	LOCALITY SPECIES
	6	3			10					MALLARD
				3	33				106	COMMON GOLDENEYE
					1				7	COMMON MERGANSER
		+2							4	BALD EAGLE
1					2				1	NORTHERN GOSHAWK
										GOLDEN EAGLE
	2	1	1		3		1			MERLIN
										GYRFALCON
							1			PRAIRIE FALCON
41	94	14			21	19		17		GRAY PARTRIDGE
		1			1		24			RING-NECKED PHEASANT
									1	SPRUCE GROUSE
2		1						+2	3	RUFFED GROUSE
6	1	2			116		7	9		SHARP-TAILED GROUSE
17	277		12		1194	134		2		ROCK DOVE
5	7	1	1		2	3	2	+1	1	GREAT HORNED OWL
+1	4									SNOWY OWL
2	2	8		2	8		3	8	1	DOWNY WOODPECKER
1	1	7		1	8		3	15		HAIRY WOODPECKER
	1							4	1	THREE-TOED WOODPECKER
								+1	1	PILEATED WOODPECKER
+3	1		251				25			HORNED LARK
	+1	1		1				9	1	GRAY JAY
+1	3	15		4	4			20	5	BLUE JAY
76	16	25	14	6	236	26	8	26	13	BLACK-BILLED MAGPIE
+1				3				74	72	COMMON RAVEN
17	26	45	7	4	162	11	20	51	35	BLACK-CAPPED CHICKADEE
						1		11	12	BOREAL CHICKADEE
	5				15				1	RED-BREASTED NUTHATCH
	4	15						6		WHITE-BREASTED NUTHATCH
					7	1	1			AMERICAN ROBIN
+18	14		4		2106	2	50			BOHEMIAN WAXWING
+1	+1						1	+1		NORTHERN SHRIKE
+1			1		48					EUROPEAN STARLING
+1					+1		40			DARK-EYED JUNCO
			5							LAPLAND LONGSPUR
796	168	+150	1170		64	132	70	171	12	SNOW BUNTING
										RED-WINGED BLACKBIRD
							+1			RUSTY BLACKBIRD
										ROSY FINCH
2	9	12		4	52	14	3	7	11	PINE GROSBEAK
					4				2	RED CROSSBILL
	2			5	13	5			43	WHITE-WINGED CROSSBILL
32	35	2		2	19	28			55	COMMON REDPOLL
2	48				2	9			26	HOARY REDPOLL
+18	1	150					8	12		EVENING GROSBEAK
538	1972	30	150		1623	377	45	40		HOUSE SPARROW
0	5	0	0	0	9	1	2	1	3	NO. SPECIES IN TABLES 3 & 4
15	26	18	11	11	34	14	20	18	26	NO. COUNT DAY SPECIES
24	29	20	11	11	36	14	21	22	26	NO. COUNT PERIOD SPECIES
1538	3444	333	1616	35	5776	787	314	484	417	NO. COUNT DAY INDIVIDUALS

Table 2-7. SPECIES RECORDED FROM MORE THAN THREE LOCALITIES. A PLUS SIGN INDICATES A HIGH COUNT FOR A SPECIES SEEN DURING COUNT PERIOD BUT NOT ON COUNT DAY

SPECIES	LOCALITY	SWIFT CURRENT December 16	TISDALE December 26	TISDALE December 25	WEYBURN December 23	WHITE BEAR January 2	WHITEBEECH December 31	WOLSELEY SOUTH January 1	YORKTON December 22	NO. OF COUNTS PER SPECIES
MALLARD		7								11
COMMON GOLDENEYE										11
COMMON MERGANSER										4
BALD EAGLE										8
NORTHERN GOSHAWK								1		18
GOLDEN EAGLE						+2				9
MERLIN										11
GYRFALCON										4
PRAIRIE FALCON						+1				6
GRAY PARTRIDGE		23	1	7	44	14	+12	+8	33	46
RING-NECKED PHEASANT						+8				12
SPRUCE GROUSE										4
RUFFED GROUSE			1				+1	3	2	20
SHARP-TAILED GROUSE		114	9			5	+1	5	35	47
ROCK DOVE		113			81	175		+7	103	38
GREAT HORNED OWL		1			1	2		2		39
SNOWY OWL						+4		+1		24
DOWNY WOODPECKER			2	2			1	1	1	44
HAIRY WOODPECKER			1	1			2	1		4
THREE-TOED WOODPECKER										7
PILEATED WOODPECKER										7
HORNED LARK		223			31					17
GRAY JAY				1			1			17
BLUE JAY			3	3			8			26
BLACK-BILLED MAGPIE		34	2	6	5	25	5	2	5	64
COMMON RAVEN			1	4			15			30
BLACK-CAPPED CHICKADEE			4	6		2	6	3	22	55
BOREAL CHICKADEE										7
RED-BREASTED NUTHATCH										16
WHITE-BREASTED NUTHATCH							+1			11
AMERICAN ROBIN										5
BOHEMIAN WAXWING		42	+4			4			4	34
NORTHERN SHRIKE		1				+1				17
EUROPEAN STARLING										9
DARK-EYED JUNCO							1			11
LAPLAND LONGSPUR										4
SNOW BUNTING		4299	24	15	155	60	+15	3	18	57
RED-WINGED BLACKBIRD										4
RUSTY BLACKBIRD						+1		+6		6
ROSY FINCH						+3				5
PINE GROSBEAK		2					+1	+6	38	33
RED CROSSBILL										5
WHITE-WINGED CROSSBILL										12
COMMON REDPOLL		210	15				+1	50	25	36
HOARY REDPOLL										20
EVENING GROSBEAK			3				90			24
HOUSE SPARROW		209	20	10	86	200	+30	40	525	59
NO. SPECIES IN TABLES 3 & 4		0	0	0	0	2	0	0	0	
NO. COUNT DAY SPECIES		13	13	10	7	10	9	10	12	
NO. COUNT PERIOD SPECIES		13	14	10	7	18	17	16	12	
NO. COUNT DAY INDIVIDUALS		5178	86	55	403	491	129	110	811	



Table 3. SPECIES SEEN IN THREE OR FEWER LOCALITIES

<i>SPECIES</i>	<i>LOCATIONS AND NUMBERS SEEN</i>
COMMON LOON	GARDINER DAM, 1; GARDINER DAM, 1
TUNDRA SWAN	GARDINER DAM, +2; SASKATOON, 1
SNOW GOOSE	REGINA, 1
CANADA GOOSE	REGINA, 650
GADWALL	ESTEVAN, 2
LESSER SCAUP	ESTEVAN, 6; SASKATOON, 6
TURKEY VULTURE	FORT WALSH, 1
ROUGH-LEGGED HAWK	SQUAW RAPIDS, 1
WILLOW PTARMIGAN	LA RONGE, 2
SAGE GROUSE	GOVENLOCK, +20
WILD TURKEY	FORT WALSH, +1
GREAT GRAY OWL	SQUAW RAPIDS, 1
SHORT-EARED OWL	CORONACH, 1; WHITE BEAR, 4
NORTHERN SAW-WHET OWL	FORT QU'APPELLE, 1
BOREAL OWL	INDIAN HEAD, 1
BLACK-BACKED WOODPECKER	SOMME, 2; SQUAW RAPIDS, 1
NORTHERN FLICKER	REGINA, +1; SKULL CREEK, 1
AMERICAN CROW	SASKATOON, +1
BROWN CREEPER	FORT WALSH, 2; SASKATOON, 1
GOLDEN-CROWNED KINGLET	FORT QU'APPELLE, +1; FORT WALSH, 10; SASKATOON, 5
TOWNSEND'S SOLITAIRE	FORT WALSH, 1; RAVENSCRAG-EASTEND, 1
VARIED THRUSH	FORT QU'APPELLE, +1
CEDAR WAXWING	SASKATOON, 1; MELFORT, 10
AMERICAN TREE SPARROW	GOVENLOCK, 2
SONG SPARROW	PIKE LAKE, 1
HARRIS' SPARROW	GARDINER DAM, 1; SASKATOON, 1
WESTERN MEADOWLARK	SKULL CREEK, 1; WHITE BEAR, +1
COMMON GRACKLE	SASKATOON, 1
PURPLE FINCH	LOVE-TORCH RIVER, +5
PINE SISKIN	SASKATOON, 6; PRINCE ALBERT NATIONAL PARK, 2

Table 4. BIRDS NOT IDENTIFIED TO SPECIES

<i>SPECIES GROUP</i>	<i>LOCATIONS AND NUMBERS SEEN</i>
FALCON species	ARDATH-OUTLOOK, 1; ESTEVAN, 1; KENASTON, 1
OWL species	LOVE-TORCH RIVER, 1
SCREECH-OWL species	FORT WALSH, 1
WOODPECKER species	FORT WALSH, 2
CROSSBILL species	REGINA, 5
REDPOLL species	ARDATH-OUTLOOK, 107; BIGGAR, 45; CORONACH, 152; ESTEVAN, 17; FORT WALSH, 2; GOVENLOCK, 4; MUENSTER, 1; REGINA, 89; SCOTT, 25

# FIRST DOCUMENTED RECORD OF THE BAND-TAILED PIGEON IN SASKATCHEWAN

CHRISTOPHER I.G. ADAM, 2636 Argyle Street, Regina, Saskatchewan, S4S 0K1 and ROBERT KREBA, Saskatchewan Museum of Natural History, Wascana Park, Regina, Saskatchewan. S4P 3V7



*Band-tailed Pigeon at Weyburn, Saskatchewan*

*Chris Escott*

In Canada the Band-tailed Pigeon is normally found in the open mixed-wood forests of coastal British Columbia.<sup>1</sup> Despite this, it does sometimes wander inland, and has been reported in Saskatchewan on several occasions since 1970.<sup>2 3 4 5 6</sup>

<sup>7</sup> None of these records had been substantiated by a photograph or a specimen, leaving the Band-tailed Pigeon as a hypothetical species on the 1984 field checklist of Saskatchewan birds. In late summer of 1984, an adult bird of this species stayed at Weyburn for almost two weeks, during which time it was seen by numerous observers, and

photographed.

The Band-tailed Pigeon is superficially very similar to the domestic Rock Dove, although it is slightly larger. Weyburn resident Nick Postey first noticed a "strange" pigeon on the grounds of the Souris Valley Extended Care Hospital on 24 August. It did not associate with the numerous Rock Doves and spent most of its time in trees or bushes. He was able to observe it well enough to identify it as an adult Band-tailed Pigeon; he subsequently showed it to Ray Belanger and others.



Realizing that the bird was out of its usual range, Postey telephoned Bob Luterbach, in Regina on 25 August. The pigeon was not seen on the 26th, but reappeared on the 27th in a large poplar it had evidently selected for its evening roost. On 28 August, C. Adam, F. Brazier, R. Kreba and B. Luterbach travelled from Regina to meet Postey and Belanger at Weyburn hoping to see the bird.

In the late afternoon the pigeon was flushed from a tall caragana hedge near the roost tree. Observed briefly as it flew, four characteristics noted were large size, gray body, absence of white on rump, and a banded tail. Other diagnostic features observed while the bird perched in the roost tree were the white band on nape, black-tipped yellow bill, and yellow feet. The banded tail is a poor field mark that is not readily observable.

The pigeon was studied for almost an hour with binoculars and tripod-mounted scopes (up to 60X). During this time, Chris Adam obtained several identifiable photos of the pigeon, using a 70 — 250 mm zoom lens, thus documenting the sighting for the provincial list.

The pigeon remained in the tree when the observers left shortly before dusk. According to Postey, the bird returned to this roost tree every evening until it was last observed 4 September. It could not be found during the day when it was presumably foraging elsewhere. Postey also noted that on 5 September, not only did the Band-tailed Pigeon fail to appear in its usual roost tree, but that the regular population of Mourning Doves had also departed the area.

Postey was able to show the Band-tailed Pigeon to Saskatoon birders A. Smith, C. Escott and H. Lane on 1

September; identifiable colour slides were also obtained by Escott. Both Adam and Escott donated copies of these to the photographic files of the Museum of Natural History in Regina.

Previous sightings of the Band-tailed Pigeon in Saskatchewan have always been of single birds, usually seen briefly over one or two days by only one or two observers. These records were 6 August, 1970, at Valley Centre near Rosetown, by Wayne and Don Renaud, 30 September, 1970, at Saskatoon, by Shelagh Aldous, 28-29 June, 1980, near Mortlach, by B. Forbes, 20-21 June, 1981 near Herbert (about 80 km west of the 1980 sighting), also by B. Forbes, and 25, 28 June, 1982, near Raymore, by W. Harris.<sup>6 7 2 3 4</sup>

In contrast, the bird at Weyburn was present for 12 days, was at an established roosting site and was tame enough to allow it to be photographed. The Weyburn sighting thus constitutes the sixth record for Saskatchewan, and is the first to be documented by photographs.

<sup>1</sup>GODFREY, W.E. 1966. The birds of Canada. National Museums of Canada, Ottawa.

<sup>2</sup>GOLLOP, B. 1980. Prairie provinces region. *American Birds* 34:905.

<sup>3</sup>GOLLOP, B. 1981. Prairie provinces region. *American Birds* 35:950-952.

<sup>4</sup>GOLLOP, J.B. 1982. Prairie provinces region. *American Birds* 36:988-990.

<sup>5</sup>HOUSTON, C.S., M.I. HOUSTON and J.B. GOLLOP. 1981. Saskatchewan bird species - hypothetical and rejected. *Blue Jay* 39:196-201.

<sup>6</sup>RENAUD, W. 1970. First sight record of the Band-tailed Pigeon in Saskatchewan. *Blue Jay* 28:166.

<sup>7</sup>SHADICK, S. 1975. Highlights of Saskatoon bird observations 1970 - 1974. *Blue Jay* 33:165-168.

# PEREGRINE FALCONS HARASS NESTING GREAT HORNED OWLS

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The 1984 owl banding weekends produced a new and surprising experience — particularly notable because it was repeated on four different occasions.

As we approached a Great Horned Owl nest with Bob Robinson, south of Young on 6 May, the adult female owl flushed from the nest. Almost at once a good-sized raptor appeared out of nowhere, swooped around the owl and fanned its tail as it banked. The raptor chattered in a frenzied fashion. We could see a black face patch, but the bird did not make a vertical stoop as falcons usually do. It made four passes around the owl.

With Chris Thompson south of Kelliher on 13 May, we had an almost identical experience. This time we had excellent views of the black moustache marks of the Peregrine Falcon, which made about six passes near the owl. With John Gillard near Crescent Marsh west of Saltcoats, also on 13 May, another Peregrine appeared just as the owl left the nest, and made about three passes at it. With Scott Bridge east of Domremy on 19 May, a Peregrine suddenly appeared and made a single pass near the female owl as she left the nest.

The suddenness of the appearance and attack, the vocalizations, and the flight patterns were identical each time. Never did the Peregrine seem to make contact with the owl or scatter feathers, nor did it show any interest in the nestling owls.

We also encountered a dried Peregrine carcass, impaled and twisted on a barbed wire fence in open grassland habitat west of Colville on 24 June. We estimated that it had become entangled in flight one or two months earlier.

While our sample is small and perhaps not appropriate for statistical analysis, Peregrines harassed the female owl at 4 of 104 successful Great Horned Owl nests in 1984, in sharp contrast to 0 events at 1640 successful Great Horned Owl nests in previous years. This is statistically highly significant ( $x^2 = 60.88$ ,  $df = 1$ ,  $P$  less than 0.001). Only twice before on owl banding weekends since 1958 had we even sighted a Peregrine Falcon, both at some distance from any known owl nest.

All four Peregrine Falcon—Great Horned Owl encounters were within similar aspen parkland habitat, where there are no possible or potential Peregrine nesting sites available. The maximum distance between encounters, from Domremy to Saltcoats, was about 240 km, so we presume that four different Peregrines may have been involved. Clearly the Peregrines were in migration. One expects them to hunt mainly near marshes, but only at the Saltcoats nest was there a substantial marsh nearby.

Why did the Peregrine harass the owl? Probably for the same reason



that American Crows so commonly mob the female owl when she leaves her nest: because they are mortal enemies, as shown by crow remains in owl nests.

Why did the Peregrine not stoop at the owl in a vertical dive, and why did it not hit the owl? Probably more typical falcon attack behaviour would have been in evidence had the roles been reversed, and had the owl passed near a falcon nest.

The final speculation concerns the numbers of Peregrine Falcons. Our small sample suggests that Peregrines were more prevalent than

during the past 25 years in an area of Saskatchewan parkland for two weeks of May 1984. This could mean either that the normal wild population en route to northern territories is increasing, now that they carry a lower burden of pesticide residues, or that we have subadult Peregrines ranging over the parkland after having been released into the wild from captive rearing projects. It is possible that one or more of our birds had been "hacked out" at the Nisku Wildlife Refuge north of Eyebrow, or even from the Bessborough Hotel in Saskatoon.



*Great Horned Owl on nest*

*K. Morck*



# NESTING TURKEY VULTURE NEAR BIGGAR, SASKATCHEWAN

GUY J. WAPPLE, Box 1045, Biggar, Saskatchewan. S0K 0M0

In late June of 1983, Jack de Bussac informed me of a strange bird he and a local farmer, Norman Smith, had observed while fixing a tractor tire approximately 35 km northeast of Biggar. From the brief description Jack gave me — a large black hawk with a “bald” head — I was almost certain the bird in question was a Turkey Vulture. When he later told me that Norm had referred to the bird as a “Turkey Buzzard” which was nesting in the vicinity, I immediately made arrangements to have him show me the abandoned farmstead where the sighting had occurred. A phone call to Smith the next day confirmed that there was indeed a pair of vultures with a nest in the attic of an abandoned house six km northeast of his place.

On the evening of 7 July, de Bussac, Robert Wapple and the author arrived at Smith's house to check if the birds were still present.

He advised us that they were and gave us permission to check on them if we wanted. Within five minutes we pulled in to the old farmstead which consisted of a house, barn and a few sheds surrounded by poplars, maples and carraganas on the north and west sides. (*Fig. 1*). We parked near the house and cautiously approached the building on foot, not knowing what to expect. Just as we stopped at the east side of the house, there was a commotion inside the attic. Seconds later an adult Turkey Vulture flapped out the window, startling us! The window was approximately four m above the ground, 45 cm wide by 120 cm high. (*Fig. 2*). The adult bird flew low around the farmyard for several minutes as we positioned a ladder underneath the window for further investigation. As I climbed the ladder however, the vulture flew to the north and was not seen again during the course of our visit, which lasted 20 minutes.



Figure 1. *Abandoned farmstead northeast of Biggar where vultures nested in 1983*





Figure 2. *View of east side of house where vulture nest was located; adult flushed from upper window*

In the darkened attic there was a most unpleasant odour. It wasn't too offensive though, and I began to search for the eggs or young among the sawdust and wood chips which covered the entire floor. Stepping lightly over the beams (hoping the roof would support my weight!), I noticed a slight movement in the extreme northwest corner of the attic. There were two nestlings completely with white down, except for their black faces. My estimate is that they were seven to ten days old. When I moved closer, the young withdrew clumsily into the corner. Even at this early stage of development, the birds appeared to recognize me as a threat — both hissing continuously and spreading their wings upon my approach. When I attempted to capture one of the young to show my cousin and brother, the bird promptly left me with a couple of gashes on my arm! No further harm was done however, and I quickly returned it to the attic. We then left the farm to talk to Norm Smith about this unusual find. He related to us that since moving to his farm in 1976, the vultures had nested four times at this location and one

other nearby abandoned homestead.

In the afternoon of 25 July, I made a return visit to the site. This time no adults were observed in the area. Both young again retreated to the corner of the attic, hissing loudly and snapping their bills, while spreading their rapidly developing wings. To my surprise, they had more than doubled in size. The body plumage still consisted mostly of down, but the primary and secondary feathers on the wings were quite advanced. The odour of decaying animal matter on a hot July day in the cramped quarters of the attic is a smell I will not soon forget! This was my last visit to the house. On 12 September, Smith phoned to let me know one juvenile was flying, while the other bird had moved "donwstairs", apparently not yet strong enough to take wing. While birding ten km southeast of the nest-site on 13 September, I noted an adult vulture soaring south, possibly one of the parents.

A search through the literature in my library, produced only two references to vultures nesting in



similar circumstances. In both instances, the birds chose the floor of abandoned barns.<sup>1</sup> Most nests are located in caves, hollow logs or dense undergrowth. Houston's summary of breeding locations in Saskatchewan also listed various examples of ground nesting in the 12 areas reported, as did Schmidt.<sup>2 3</sup> In conclusion, the vulture breeding record near Biggar appears to be quite unique. The birds did not nest in either locality in 1984. (Norm Smith, pers. comm.)

Turkey Vultures are listed as rare transients in the Rosetown-Biggar district, immediately south of this observation, by Renaud and Renaud.<sup>4</sup> They listed six records for the species up until 1975. Since then, there have been only two other occasions when vultures have been reported: 14 May 1976, a single adult

over Biggar;<sup>5</sup> 6 June 1982, one adult noted by the author, 30 km west of Biggar.

<sup>1</sup>BENT, A.C. 1961. Life histories of North American birds of prey. Volume 1. Dover Reprint. New York. 409 pp.

<sup>2</sup>HOUSTON, C.S. 1969. Turkey Vulture breeding records in Saskatchewan. Blue Jay 27(1):37-38.

<sup>3</sup>SCHMIDT, J.W. 1973. Cave-nesting Turkey Vultures of the South Saskatchewan. Blue Jay 31(1):58.

<sup>4</sup>RENAUD, W.E. & D. H. RENAUD. 1975. Birds of the Rosetown-Biggar District, Saskatchewan. S.N.H.S. Special Publication No. 9. 120 pp.

<sup>5</sup>WAPPLE, G.J. 1976. Additions to "Birds of the Rosetown-Biggar District, Saskatchewan". Blue Jay 35(3):157-160.

## ABANDONED HOUSE NEST SITE FOR TURKEY VULTURE

RHYS BEAULIEU, Saskatchewan Parks and Renewable Resources, Box 970, Hudson Bay, Saskatchewan. S0E 0Y0

Part of my job as Regional Wildlife Biologist with Saskatchewan Parks and Renewable Resources is to look into the possibility of improving habitat conditions on Wildlife Development Fund Lands to increase wildlife production. On 15 June 1984 Dan McGill, Conservation Officer at Preeceville, and I were carrying out a habitat investigation on WDF land north of Preeceville, Saskatchewan. A local land owner had contacted McGill about rebreaking and seeding to alfalfa a 15 acre field. The first cut

of alfalfa (cut after the nesting season) would be sold to the farmer with the money going back into the Wildlife Development Fund and the second cut would be left standing to provide an increased food source for White-tailed Deer and Elk and cover for upland game birds, waterfowl and other species of birds and mammals.

Overlooking the field, was a small abandoned two story house which we investigated. The house was a log structure in very poor condition. I





*Log house, top window used by Turkey Vulture to enter upper story*

*Rhys Beaulieu*

climbed the steps to the second story and for a couple of seconds, while still standing on the steps, watched a large dark bird walking towards me. The bird quickly took flight through the open window. I was somewhat startled; it took me a few moments to realize that the bird was a Turkey Vulture. Entering the upstairs room, I found two eggs the size of chicken eggs, light brown in colour. There appeared to be no attempt to make a nest since the eggs were on the bare floor about 20 in. from the corner of the room.

On 17 July, 1984 I returned to the house hoping to take pictures of the adult bird and the hatched young. I found only one chick. The adults were either frightened off when I entered the house or were out scavenging for food. The single chick was still covered with down, although there was evidence of flight feathers. It stood about 12 in. high and displayed defence actions which included outstretching its wings and making a hissing sound. Unfortunately there was not enough light for

good pictures.

Wenzel Fialkowski, a local farmer, informed me that this is the second year that Turkey Vultures have used the house as a nesting site. Fialkowski said that in 1983 two chicks were raised to the flight stage and previous to my visit he had noted that two young had hatched in 1984. The chicks were very young when he visited the house. One can only guess what happened to the other young. Perhaps the living young out-competed the other for available food.

Turkey vultures prefer covered nesting sites, which include hollow logs, caves, and at the bottom of cliffs.<sup>1</sup> In Saskatchewan, where hollow trees are not large enough, nests are usually restricted to brush piles and caves. In the Porcupine Forest area, I am aware of only two other nest records as follows: Mr. Odd Steiestol reported finding two nests in 1980, one in a wood pile in Greenwater Lake Provincial Park and the other in a brush pile along a

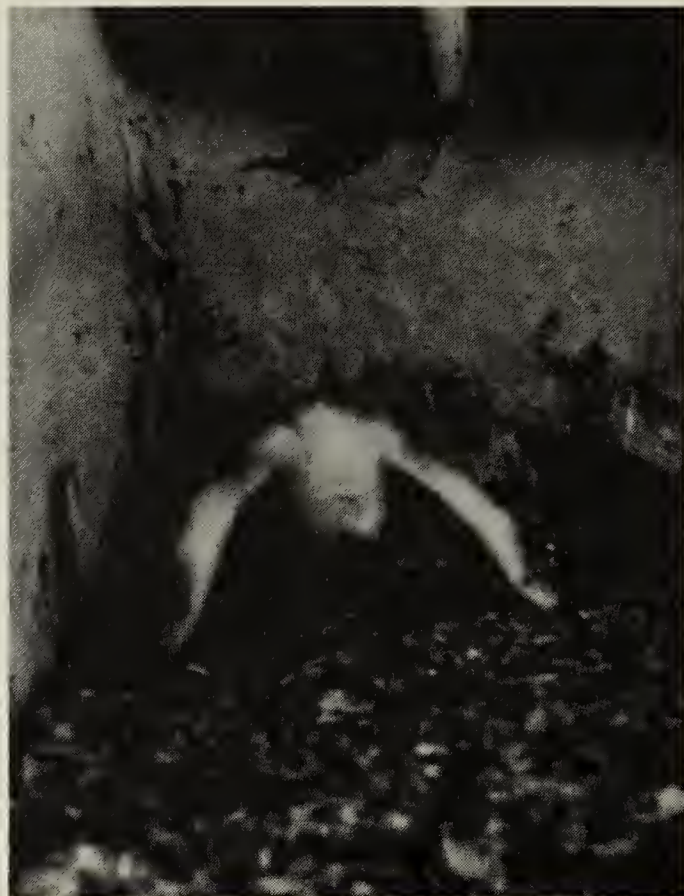


cutline north of Marean Lake.<sup>2</sup> There has apparently been only one other report of vultures nesting in a house in Saskatchewan. [In this issue.—Ed.]

Wildlife Development Fund Lands are managed for all wildlife. Old buildings, if found to be of value to wildlife, are left standing to provide nesting sites, burrows, and cover for wildlife. The old house north of Preeceville will remain with the hopes of providing a nesting site for Turkey Vultures for many years.

<sup>1</sup>SALT, W.R. and J.R. SALT 1976. The birds of Alberta. Hurtig Publishers, Edmonton, Alberta

<sup>2</sup>HARRIS, W.C., S.M. LAMONT and C.I.G. ADAM 1984. Greenwater Provincial Park Resource Inventory and Analysis. Prairie Environmental Services Incorporated, Raymore, Saskatchewan



*Turkey Vulture young*

*Rhys Beaulieu*

## NORTHERN TURKEY VULTURE NEST

FRANK SCOTT, Box 190, Loon Lake, Saskatchewan. S0M 1L0

On 12 August 1984, Brad Tokaruk, a local conservation officer, whilst on a boat patrol of Ministikwin Lake, (54° 2'N, 109° 40'W) saw two young raptors on the shore and went to investigate. The two young scrambled into a cave under a dead tree and hissed at him. No adult birds were seen. On 13 August I accompanied Tokaruk to investigate the site.

As we approached there was an adult vulture soaring over the shoreline. The cave, which was situated about 6 feet back from the water

under a dead tree, was approximately 3 x 3 ft. x 9 in. high. There was obvious evidence of occupation but no young birds were present at that time. No search was made for them since the bush was dense and wet.

Turkey Vultures are often seen in this area but this is the first nest I have seen, and it would have certainly been overlooked had the young not been right at the water's edge.

A week later the site was revisited and there were three adult and one immature Turkey Vultures sitting in trees near the shore. The young bird could be approached to 10 ft. but only poor quality polaroid photographs were obtained. No search was made for the second young vulture.



# THE EASTERN MEADOWLARK IN MANITOBA

PETER TAYLOR, P.O. Box 597, Pinawa, Manitoba. R0E 1L0

On the afternoon of 13 June 1981, while driving slowly along a gravel road about 3 km south and 1 km east of River Hills, Manitoba (50° 3' N, 96° 1' W), I was startled to hear the clear, whistled song of the Eastern Meadowlark — so different from the rich melody of the familiar Western species. Stopping abruptly, I soon located the songster on a fence-post just north of the road. It was clearly a meadowlark, but I could not discern the subtle features of plumage that would confirm its identity. After half an hour of observation, I returned home to alert other birders.

This bird was subsequently seen and heard by many experienced observers on several occasions until my last sighting on 13 July. All observations were made within a territory extending about 1 km north of the gravel road, and about 150 m on either side of the fence line. The territory included portions of fields of alfalfa and cereal grains. The landowners, Lorne and David Knopf, kindly permitted observers to drive alongside the fence to watch the bird at close quarters. The following notes summarize observations on the bird's plumage, vocalizations and behaviour, and amplify a brief account published elsewhere.<sup>7</sup> These observations comprise the only documented evidence for the occurrence of the Eastern Meadowlark in Manitoba, although there have apparently been a few unconfirmed sightings.<sup>2</sup>

## Plumage

The most prominent field mark

cited by identification guides for distinguishing between Eastern and Western meadowlarks is the extent of yellow on the cheeks. Many guides indicate that the yellow does not extend onto the cheek in the Eastern Meadowlark, whereas it does in the Western. However, Rohwer showed that the situation is less clear-cut.<sup>5</sup> He measured the "vertical extent of yellow feathers in the malar region above the submalar apterium" (i.e. onto the cheek) on meadowlark specimens collected in the midwestern United States. Values for Eastern and Western meadowlarks fell within the range 1-4 mm and 4-10 mm, respectively. The yellow on the River Hills bird certainly did extend onto the cheek; Rudolf Koes and I judged that it resembled a Western Meadowlark in this respect.

Other observations on plumage were hindered by feather wear, especially on the primaries and rectrices. The bird's appearance also varied with different lighting and weather conditions. David Hatch and I independently observed that the bird had a darker brown back, and more heavily marked flight feathers than Western Meadowlarks — consistent with the Eastern species. Koes also noted that the eyeline was very dark and conspicuous, again resembling illustrations of the Eastern bird. However, the streaking on the flanks seemed less heavy and extensive than expected for an Eastern Meadowlark.

## Vocalizations

I noted four general song types.

Three were variations of the characteristic “tee-yah tee-yair” of the Eastern Meadowlark, with different patterns of inflection but appropriate tone and cadence. The fourth song consisted of an introductory note, then a downward-slurred whistle with Eastern cadence but the modulated tone of the Western species. This character was immediately apparent when tapes were played back to birders who had not yet heard the bird in the field.

David Hatch observed this bird for over two hours on 20 June.<sup>2</sup> He noted four “good Eastern” song types, and also heard the characteristic, buzzy “dzert” call-note of the Eastern Meadowlark. George Holland made similar observations on 14 June. Hatch, furthermore, believed that *two* meadowlarks were uttering Eastern calls on 20 and 23 June, while Holland and Martin Siepman also thought that a second bird was present on 27 June.

After a detailed study of the two meadowlark species in Wisconsin, Lanyon concluded that the song is learned, and individuals of one species may occasionally utter the song of the other.<sup>4</sup> However, the call-note (“dzert” in the Eastern, “chupp” in the Western) appeared to be inherited — or, if learned, it was acquired during the nestling period. Rohwer found that both songs and call-notes were almost invariably uttered appropriately, as indicated by detailed examination of specimens whose calls or song-types had been registered.<sup>5</sup> Lanyon believed that the “hybrid song”, consisting of “phrasing...that is characteristic of the song of the eastern, but the timbre of that of the Western bird”, was not a reliable indicator of hybridization, contrary to the assertions of earlier authors he cited.<sup>4</sup> Rohwer also downplayed the significance of

hybrid song.<sup>5</sup>

### Behaviour

At 8 a.m. on 14 June, the River Hills bird responded immediately to a taped Eastern Meadowlark song, recorded in New York state, when played from a car window about 200 m away.<sup>3</sup> It flew to within 30 m of the car, and sang vigorously from telephone and fence wires. It also responded to playbacks of Western Meadowlark songs, but only uttered Eastern-type songs in response. Western Meadowlarks in nearby territories responded only to Western Meadowlark playbacks, apparently being unaccustomed to territorial disputes with their Eastern cousins. Both Rohwer and Lanyon found that the two meadowlarks defend territories against either species with similar vigour in regions where they occur sympatrically.<sup>4 6</sup> I observed one territorial encounter between the bird under study and a neighbouring Western Meadowlark. It flew in to challenge the latter bird, which sang from a roadside wire at the southern boundary of the territory described above; the Western Meadowlark drove it away.

On 20 June, Hatch observed an intense encounter between the bird and a second meadowlark.<sup>2</sup> The birds jumped a metre in the air, fluttering their wings, spreading their tails, stretching their necks and calling frequently. They appeared very similar, and only Eastern calls were heard. Based on Lanyon’s descriptions of meadowlark interactions, these observations could refer either to a territorial dispute or an intense courtship display.<sup>4</sup>

### Identification

The observations on vocalization and behaviour leave no doubt that one bird, and likely a second, with Eastern Meadowlark ancestry was present near River Hills in summer



1981. However, the vexatious question of hybridization should be addressed.

Lanyon observed no mixed pairings among over 100 meadowlark pairs he studied in Wisconsin.<sup>4</sup> However, he noted that "observations of a mixed pair in Illinois suggest that hybridization may possibly occur at the periphery of the normal breeding range, where pioneering birds are vastly outnumbered by the native species." Such is the case for Eastern Meadowlarks in Manitoba. Lanyon's suggestion was borne out by subsequent records of interbreeding during an eastward range expansion of the Western Meadowlark, as summarized by Rohwer.<sup>5</sup> The latter author concluded from his multivariate analysis of meadowlark specimens that "genetic integrity is being maintained in...areas of sympatry. Nonetheless, certain specimens...fell in phenetic positions highly intermediate... and were presumed to be of mixed ancestry."<sup>5</sup>

In conclusion, although hybridization between these two meadowlarks is a rare event, we can not rule out the possibility that the River Hills birds were hybrids. Conclusive proof of identity would be impossible without detailed examination of a bird in the hand. However, any attempt to trap or collect an individual might have jeopardized the establishment of a breeding population of Eastern Meadowlarks. As luck would have it, this pioneering effort apparently failed, for no further records occurred from 1982 through 1984.

### **Regional perspective**

Recent records from neighbouring regions to the southeast indicate that the colonization of southeastern Manitoba by Eastern Meadowlarks is not unexpected. Green and Janssen

summarize this species' status in Minnesota in summer as follows: "Resident eastward from Lake of the Woods [this county adjoins the Manitoba border], Clearwater and Otter Tail counties in the north, and southward through the middle of the central region to Blue Earth and Faribault counties in the south."<sup>1</sup> In personal correspondence, Robert Janssen and Kim Eckert indicated little recent change in the species' status in Minnesota. Eckert informed me of one sighting at Angle Inlet in the Northwest Angle, within 8 km of the Manitoba border and 100 km southeast of River Hills, in June 1977. Clive Goodwin, Doug McRae and Alan Wormington informed me of eight different spring and early summer records of Eastern Meadowlarks in extreme northwestern Ontario, mainly near Rainy River, about 50 km from the southeastern extremity of Manitoba, in 1974-82. The Eastern Meadowlark should therefore be sought by birders in the southeastern corner of Manitoba. In doing so, bear in mind that Eastern Meadowlarks are known to prefer lower-lying, moister habitat than their Western counterparts, although this was not apparent in the River Hills sightings.<sup>4 6</sup>

### **Acknowledgments**

I am grateful to the following individuals for helpful discussions and correspondence: K.R. Eckert, C.E. Goodwin, D.R.M. Hatch, G.E. Holland, R.B. Janssen, R.F. Koes, R.D. McRae, R.W. Nero, H.A. Ross, A. Wormington and R. Zach.

<sup>1</sup>GREEN, J.C. and R.B. JANSSEN. 1975. Minnesota birds: where, when, and how many. University of Minnesota Press, Minneapolis.

<sup>2</sup>HATCH, D.R.M. 1981. Meadowlark species sing different, unique songs. Chickadee Notes, Winnipeg Free Press, 26 June.

<sup>3</sup>KELLOGG, P.P., A.A. ALLEN and R.T. PETERSON. 1971. A field guide to bird songs of Eastern and Central North America (revised). Houghton Mifflin Company, Boston.

<sup>4</sup>LANYON, W.E. 1957. The comparative biology of the meadowlarks (*Sturnella*) in Wisconsin. Nuttall Ornithological Club Publication No. 1. Cambridge, Massachusetts.

<sup>5</sup>ROHWER, S.A. 1972. A multivariate assessment of interbreeding bet-

ween the meadowlarks, *Sturnella*. Systematic Zoology 21:313-338.

<sup>6</sup>ROHWER, S.A. 1973. Significance of sympatry to behaviour and evolution of Great Plains meadowlarks. Evolution 27:44-57.

<sup>7</sup>TAYLOR, P. 1983. Wings along the Winnipeg: the birds of the Pinawa - Lac du Bonnet region, Manitoba. Eco Series No. 2, Manitoba Naturalists Society, Winnipeg, pp. 171-172.

## VARIED THRUSH IN SASKATOON

RON JENSEN, 1027 King Crescent, Saskatoon, Saskatchewan.  
S7K 0N9

Flocks of robins were mobbing the neighbour's Mountain Ash as the migrating birds feasted on overripened fruit. Early frosts and overripe fruit have strange effects on feeding birds; as a result 22 September 1984 was a memorable day!

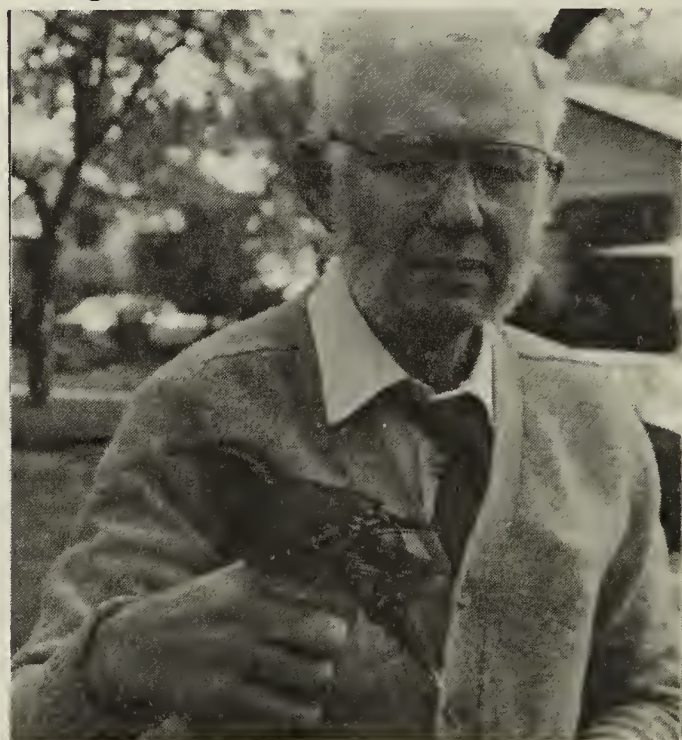
About two days earlier a Swainson's Thrush had flown into our den window. "Another thrush" were my thoughts upon hearing a thud at the den window. A thrush was correct, but a Varied Thrush was the surprise. It didn't recover in the back yard, as the Swainson's Thrush had, but in the dark of a cardboard box in the den.

I telephoned Dr. Houston to enquire about banding a Varied Thrush. His response was very positive but skeptical about the thrush's recovery. Recover it did! A few minutes after Dr. Houston arrived, the thrush began flying around the den. The adult male

Varied Thrush was photographed, banded and released.

Varied Thrushes have been reported several times in the *Blue Jay* but observing one close at hand and photographing a lifer is something else.

Why was Dr. Houston interested in banding the Varied Thrush? It was his two hundredth species banded. Congratulations!!



*C. Stuart Houston with 200th species banded*  
*R. Jensen*



# BOHEMIAN WAXWINGS FEED ON SCALE INSECTS

DALE HJERTAAS and PAULE HJERTAAS, 919 Cook Crescent, Regina, Saskatchewan. S4X 2L9

The flocks of Bohemian Waxwings which brighten our winters are normally thought of as berry eaters, although they will also take buds of poplar and seeds of Box Elder, Black Birch, Locust and Hollyhock.<sup>1</sup> In summer they take up flycatching. However, as far as we can determine, Bohemian Waxwings have not previously been noted to search for and take large numbers of dormant insects in winter.

About 1500 h, 23 November 1980, we were walking at the Saskatoon Forestry Farm birding and taking photographs. Dale noted 30 Bohemian Waxwings in a row of Manitoba Maple and Green Ash and another 150 waxwings across the road. He approached the first group hoping for photos.

While waiting for the perfect photo he realized that these waxwings were not taking tree buds as assumed. Instead they were removing bumps which practically covered the bottoms of some branches.

Consultation with Paule followed. The bumps were scale insects (superfamily Coccoidea). Female scale insects are sedentary. They settle to suck sap from a tree and develop a scale over their body for protection. Eggs are laid under the scale and the female dies at summer's end. The scales resemble tree buds to the casual observer.

On 7 December Dale observed about 250 Bohemian Waxwings at the Forestry Farm. Most seemed to be

feeding on scale insects whose numbers were being rapidly reduced.

This observation sparked our curiosity. How effective would the waxwings be in controlling the scale insect population. Fortunately, removal of a scale insect left a visible spot on the bark, allowing an easy count of numbers taken. On 13 December we therefore returned to the Forestry Farm to do some counts.

Our technique worked well except the intense cold forced a reduction in sample size when Paule could no longer write! We checked 4 branch sections between 6 and 12 feet above ground level. On these sections we found scars where 707 scales had been removed. We also found 49 intact scales; 93.5% of the scales had been removed.

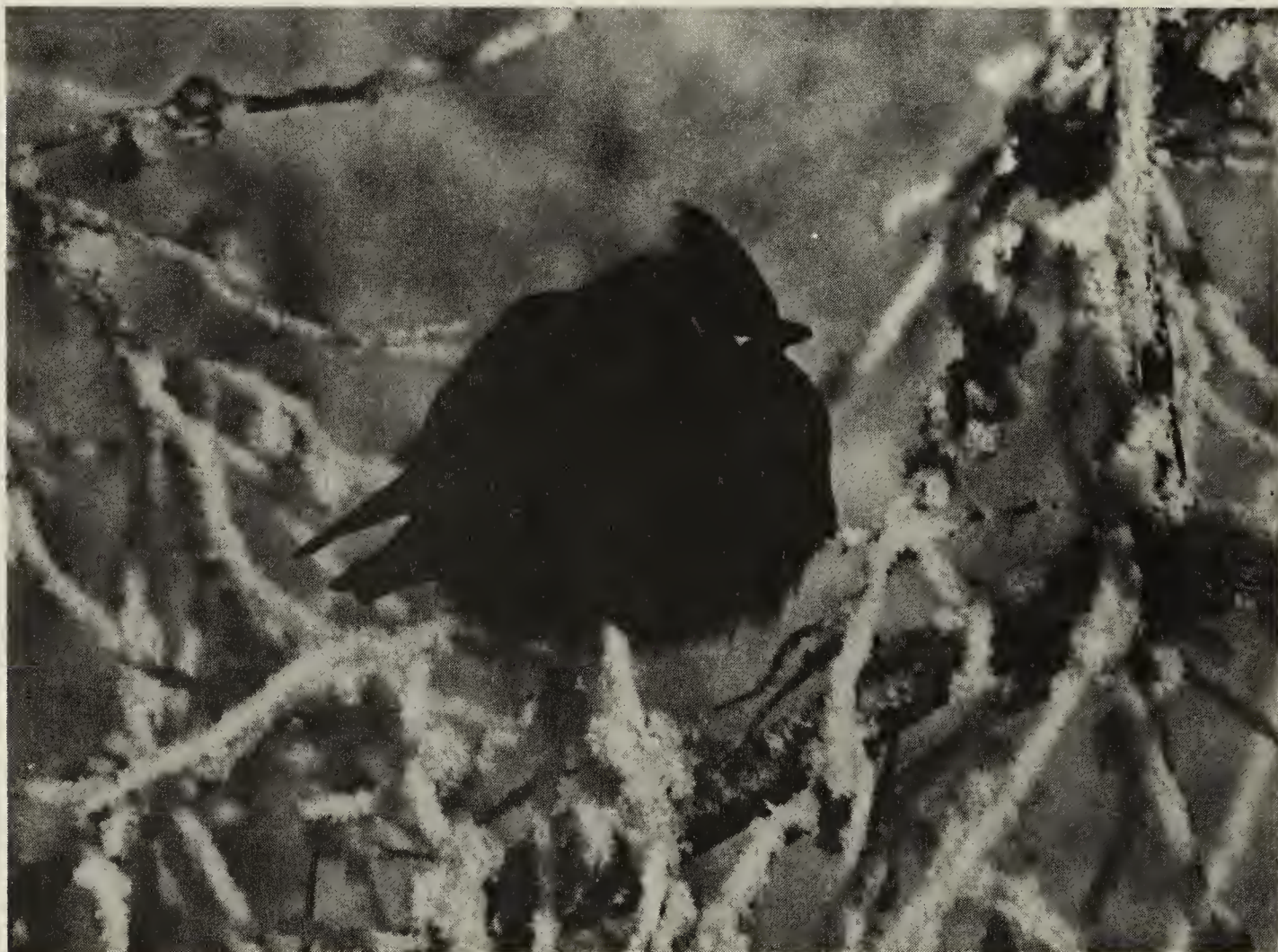
Since Bohemian Waxwings were the only agent we observed taking the scale insects, we assumed they were responsible for at least most of the removal. This level of insect control was probably as much as would be achieved. On 13 December only 50 Bohemian Waxwings were in the general area, none were observed searching for scale insects at this location, nor was this observed later in the winter. Presumably the law of diminishing returns sent the flock elsewhere after removing over 90% of the food supply.

Is this an unusual feeding habit for Bohemian Waxwings? The 1980 fruit crop was very poor. By late November



the berry supply around the Forestry Farm was getting low. Perhaps this forced waxwings to search for alternate food. Or did this flock just luck out and find a preferred protein-rich food supply at a convenient time?

BENT, A.C. 1950. Life Histories of North American wagtails, shrikes, vireos and their allies. Smithsonian Institution, U.S. National Museum Bull. 197.



*Bohemian Waxwing*

*Juhachi Asai*

## RUFOUS HUMMINGBIRD SIGHTING

JEAN HILTON and GEORGE HILTON, R.R. # 1, Bangor, Saskatchewan.  
SOA 0E0

In Saskatchewan parkland, about 25 miles north of Round Lake (Qu'Appelle Valley), we usually have a pair of Ruby-throated Hummingbirds around the yard each year and we thoroughly enjoy watching them as

they dart from flower to flower sipping nectar.

Christmas 1983 delivered a hummingbird feeder which we hung about 3 feet in front of the kitchen



sink window. By early July the number frequenting the feeder had grown to five and the male had disappeared. This made identification of the iridescent green-backed individuals difficult. With windows open, we enjoyed their shrill squeaks as they chased each other, which they did as often as they hovered to sip syrup.

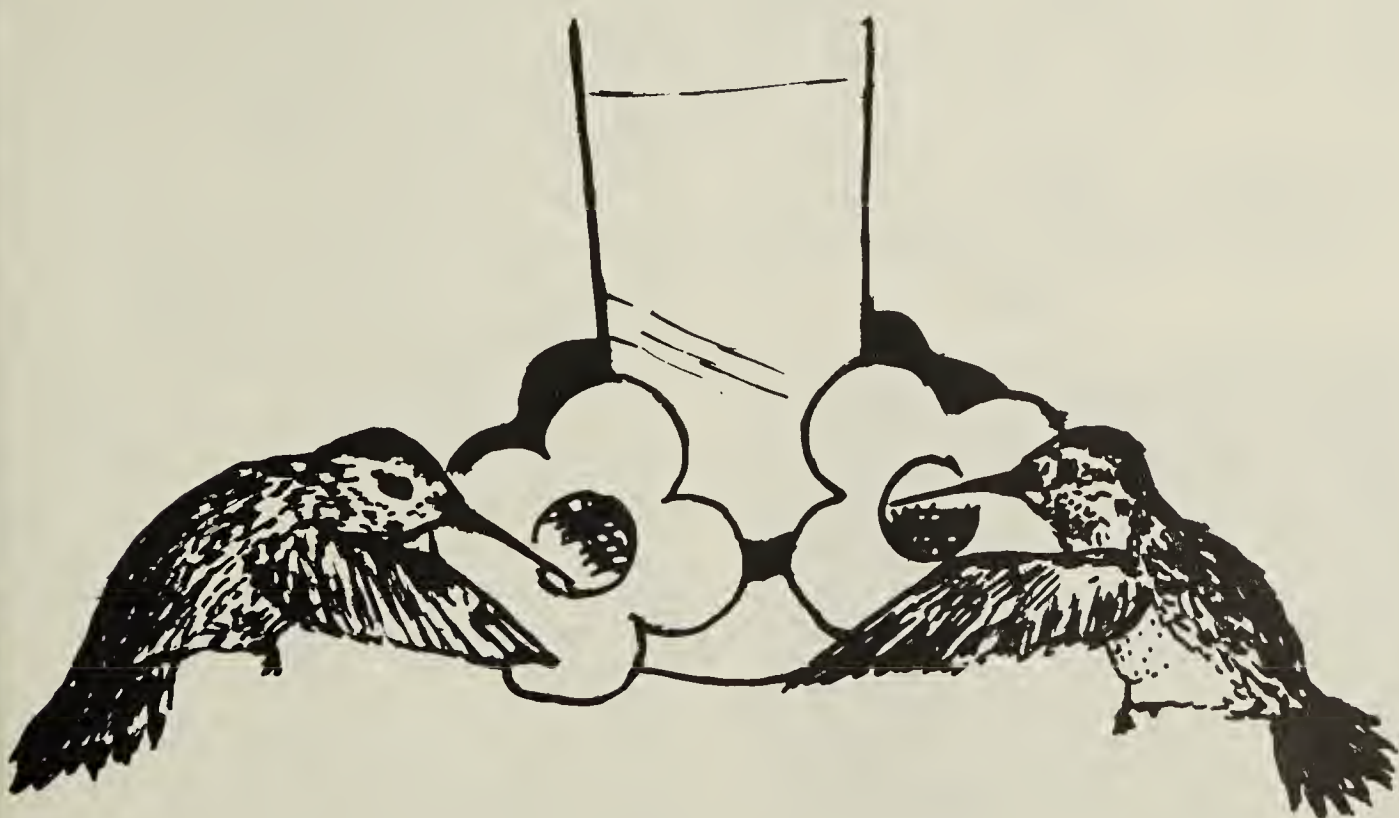
Then came a big surprise. On 31 July a newcomer was trying to feed and the Ruby-throateds were challenging his presence. The newcomer was obviously a hummingbird, but he had a cinnamon-brown back and an orange-red throat. We dashed for *Field Guide To Western Birds* (Peterson, 1961) and found that a Rufous Hummingbird was our guest. We named him "Rufous". Rufous was pugnacious and within 24 hours he had established himself as boss hummingbird. He would sit on a bare spruce branch about 8 feet from the feeder and chase off the Ruby-throateds who tried to feed. In fact, the only way they could feed at times was to come

in twos and threes and one could feed while Rufous was combatting the others.

Rufous would sit on the spruce branch, guarding the feeder, and at times his throat would look a dark brown color. Then, without any apparent movement, his throat would flash the brilliant orange, a beautiful sight.

Many happy minutes were spent watching the Ruby-throateds and Rufous, and we were surprised to note that Rufous had a different feeding position. The body of the Ruby-throated angles up to the bill which is held parallel to the ground when feeding. The Rufous however, holds its body parallel to the ground and its bill angles downward to the feeder.

Rufous stayed with us exactly one week, departing on 7 August. It would be interesting to know why he wandered so far east and if he returned safely to his own species in the western mountains.



*Rufous*

*Ruby-throated*

# COMMON LOON CONCENTRATIONS

WALTER LYSACK, Fisheries Branch,  
Box 40, 1495 St. James Street, Win-  
nipeg, Manitoba. R3H 0W9

Despite several previous large con-  
centrations of common Loons  
observed within 82 km (50 mi.) of Flin  
Flon, the reason for this behaviour  
still is unknown. Unusual numbers of  
loons have been recorded in this  
region of Manitoba and Saskat-  
chewan since 1943. One previous  
report is for August; all others are for  
June and July.<sup>1 2 3</sup>

On 13 September 1984 I observed  
about 127 loons about 5 km (3 mi.)  
west of Baker's Narrows on Lake

Athapapuskow, Manitoba (see map).  
They were floating on the water and  
covered an area of about 3000 m<sup>2</sup>. I  
watched them between 0730 and  
1000 h. None of them were seen  
feeding or flying nor did they move  
any appreciable distance during this  
time.

The map was kindly prepared by  
Horst Schell.

<sup>1</sup>NERO, R.W. 1972. Further records of  
summer flocking of Common Loon.  
Blue Jay 30: 85-86.

<sup>2</sup>NERO, R.W. 1974. Summer flocks of  
Common Loons in Manitoba. Blue  
Jay 32: 113-114.

<sup>3</sup>PREDY, R.G. 1972. Another summer con-  
centration of Common Loons. Blue  
Jay 30: 221.

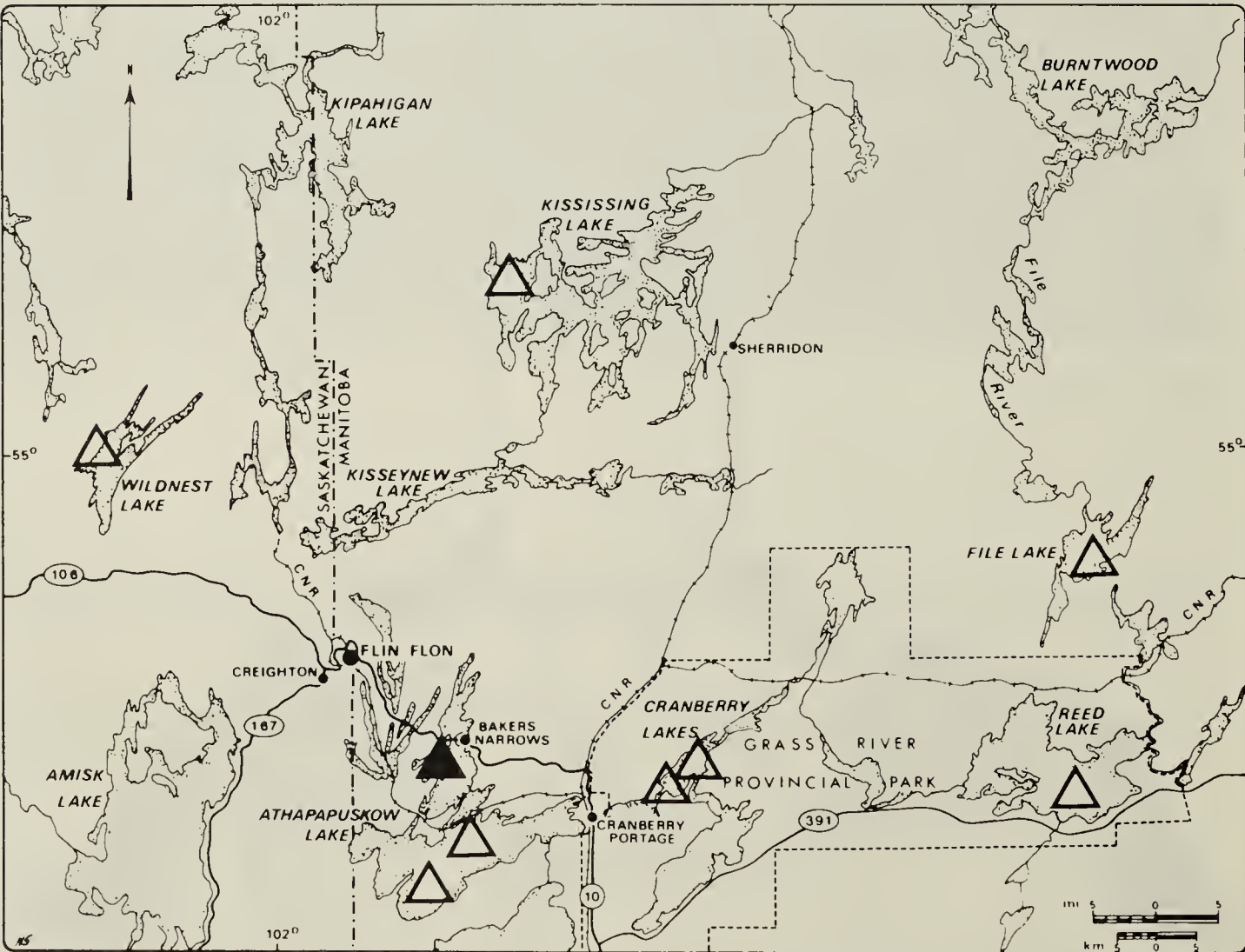


Figure 1. Map showing locations of loon concentrations mentioned in the text. Dark triangle is site of present observation.



# MANITOBA BREEDING RANGE EXTENSION AND LARGE CLUTCH SIZE FOR AN AMERICAN AVOCET

WILLIAM, H. KOONZ, Wildlife Branch, Box 14, 1495 St. James Street,  
Winnipeg, Manitoba. R3H 0W9

On 17 June 1984, Don Campbell, Terry Campbell and I visited a low rocky island along the west shore of Kawinaw Lake (52°48'N, 99°31'W). The island contained some 35 Common Terns and a colony of roughly 40 American Avocets in breeding plumage. All but one of the 13 avocet nests checked contained four eggs. This odd nest was larger, had a thicker base and contained seven eggs (see photo). The size and thickness of the nest suggests a combined effort of two females rather than a large clutch or dump nest.

This breeding record represents a northeastward extension of 160 km (100 mi.) for the American Avocet in Manitoba, and documents an abnormally large clutch size. The American Avocet is known to produce large clutches on the Canadian Prairies, although, to my knowledge, no previous large clutch record exists for Manitoba. Farley, Vermeer and Kondla all describe large clutches for Alberta and Saskatchewan.<sup>1,3,5</sup> Kondla's description suggests that two females were involved. What was at first one nest later was separated into two nests each containing four eggs, two of which were likely laid by each female. Kondla and Pinel looked at 228 Canadian nest records from several sources. Results showed that 61 (22%) contained more than 4 eggs.<sup>4</sup> None of 36 Manitoba nests contained more than four eggs. Hamilton, in his California and

Oregon studies of 1966 and 1967, stated "never did I find a nest which contained six or more eggs." Hamilton's breeding range map stopped short of Lake Manitoba for its northeastern boundary.<sup>2</sup>

<sup>1</sup>FARLEY, F.L. 1932. Birds of the Battle River region. Institute of Applied Arts Ltd., Edmonton

<sup>2</sup>HAMILTON, R.B. 1975. Comparative behavior of the American Avocet and the Black-necked Stilt (Recurvirostridae). Ornith. Monographs 17.

<sup>3</sup>KONDLA, N.G. 1977. An unusual American Avocet nest. Blue Jay 35(2):94-95.

<sup>4</sup>KONDLA, N.G. and H.W. PINEL. 1978. Clutch size of the American Avocet in the Prairie Provinces. Blue Jay 36(3):150-153.

<sup>5</sup>VERMEER, K. 1971. Large American Avocet clutches at Dowling Lake, Alberta. Blue Jay 29(2):88.



*Avocet nest*

*W.H. Koonz*

# I MARRIED A BIRD BANDER

CATHY WYLIE, 43-23 Central Place, Saskatoon, Saskatchewan. S7N 2S2

Non-birders are a common species. Most of the members of this species have very little understanding of what it means to be a birder. Occasionally they may have encountered a birder standing at the edge of a lake on a cold wet day peering at black spots out in the water. The only remaining impression of this brief encounter would be the realization that the birder lacked the sense to come in from the rain.

There was a time when I was a member of the more common species. I am now enduring the painful, but interesting process of converting to a dedicated birder. This is partly out of self defense since my husband is a dedicated birder who spends most of the weekends in the spring and summer banding with Stuart Houston. I was taken along on one trip in July of 1983 to be initiated into the art of banding. Clearly no one can say they have met all the requirements until they go on "The Pelican Weekend."

Imagine my delight at the prospect of awakening at 2:00 in the morning to make the trek to Redberry Lake. The sunrise was beautiful. We watched it from the middle of a quagmire of Saskatchewan gumbo while we tried to coax our vehicle back onto more solid mud.

By five o'clock I was standing on the shore of the lake. This was three hours into our trip and I still had not seen a bird. There were, however, an abundance of large winged creatures buzzing around my head delighted at the prospect of breakfast.

After an uneventful trip across the

lake in a canoe, I finally saw my first birds. As we approached the island, thousands of gulls swarmed into the air, squawking because they had been disturbed so early in the day. I was finally awake myself and was quickly dispatched to run after baby gulls. The chicks were not thrilled with this. They excreted and/or regurgitated their breakfast all over my hands while their parents dive-bombed from overhead.

Six hundred Ring-bills and Californias were banded and then we moved on to the Pelicans. The gulls had not wanted to be banded, but they did not protest nearly as much as the baby pelicans! When we pulled an individual from the closely packed "pod" they protested vehemently from both ends of their bodies. I had been warned it would be a smelly day.

The highlight of the trip was the quest for the scoters. Many of the dense gooseberry bushes on the islands had a resident scoter on her nest. The first one was the most fun. Ten brave birders cautiously surrounded the gooseberry bush. All of us were under strict instructions to be ready to tackle the scoter which we hoped would come flying out. After attacking six bushes in this manner we finally flushed a large female scoter. I thought it would be much larger than it was, since so many of us were needed to tackle it!

Now I have been officially inaugurated, and am looking forward, with some trepidation, to forthcoming banding trips. Next time I will make sure I wear a hat.



## PELICANS NESTING AT LAST MOUNTAIN LAKE

DEAN NERNBERG, 75 Woodward  
Avenue, Regina, Saskatchewan.  
S4R 3H3

White Pelicans successfully bred in 1984 at the north end of Last Mountain Lake after 12 unsuccessful years. Their success may have been due to the drought, which unfortunately hampered the breeding success of many other avian species. The drought caused a significant lowering of the water level in Last Mountain Lake and thus many rocky and sandy islands were exposed that would not have been in a normal year. This increased the suitable nesting habitat for the pelicans and other colonial island nesters.

On 9 July Greg Hergott and I, as employees of the Canadian Wildlife Service, censused the colonial birds that nest on Perry's Point, on the east side of the lake. On the point there were no birds, however the island off the point was covered by a large number. When we approached the island Ring-billed Gulls flew up and an estimate of 1300 individuals was made, including young, of which most were able to fly. Our disturbance as we waded toward the island scared away the adult Double-crested Cormorants and pelicans. We knew the cormorants were nesting because of the large chimney-stack nests, but assumed the pelicans were only roosting. An estimate of 60 adult cormorants was made, though we were not sure if some were off feeding. The number of cormorant chicks were estimated from a distance to lessen the disturbance; there were approximately 320 chicks. Some of the cormorant nests still had eggs. A group of nests at the edge of

the colony had no young, but 30 eggs in total.

At the end of the cormorant colony we were surprised when we saw some nests with larger eggs. They were pelican nests. The counting was done quickly so the adults would return and avoid overexposure of eggs to the sun. There were 26 eggs, some of which were in nests and some just lying in the sand. There were a few nests with one or three eggs but the majority had two. On 14 August Lyle Ludwig of the Canadian Wildlife Service revisited the island to make a count of 218 cormorant nests and 9 young pelicans.

Earlier in the summer Lyle found a small colony of pelicans on an island northwest of Perry's Point. There were three nests with five eggs in total. On 24 July Lyle, Michael Krystal and I visited the island to check the colony and found only one egg with no adults in sight. The reason for the disappearance of the eggs could not be found.

Why the pelicans have not bred for the past 12 years is unknown, however it is most likely due to the



*Pelican and cormorant colony  
Unknown*

large amount of disturbance by boaters and fishermen. I hope that it does not take another drought before the pelicans of Last Mountain Lake again breed successfully.

I would like to thank Clint Jorgenson for help with this article and Ed Driver and Phil Taylor for their encouragement to write it.

## EXOTIC BIRD IN SASKATOON

CHRISTOPHER J. ESCOTT, 271  
Sylvian Way, Saskatoon,  
Saskatchewan. S7H 5G1

On 18 July 1984, as I was engaged in strenuous soccer match, I sighted a most unusual bird. The game was being played on Fairview Field, which is bordered on east and north sides by the City of Saskatoon tree nursery. I saw the bird, and a glimpse was all I had, at about 2030 h. The sun had set a short time earlier, but the sky was clear and the early dusk visibility was good, although colours were a bit hard to distinguish.

A single bird burst out of the Manitoba Maples on the east side of the field. It was the size and shape of a Mourning Dove, but perhaps more slender with smaller head and shorter neck. The tail was longish and tapered, with a suggestion of white corners. The most striking features were the large white wing patches near mid-wing from wrist to greater coverts, and the black area between these white patches and the wing tips.

The bird flew in a dipping, swooping semi-circle out over the sidelines

of the field and back into the poplars at the northeast corner. At the crest of each swoop the tail fluttered and the bird uttered a clear whistled "klee klee klee..." at a rate of about 1 call/second. The calling continued briefly after the bird had re-entered the trees. It was not seen or heard again.

My initial reaction was "Wow! A Whited-winged Dove!" I was even more excited when I recalled hearing of an unconfirmed sighting of a White-winged Dove near Rice Lake in the summer of 1983. But I was nagged with doubts: a White-winged Dove should be chunkier than a Mourning Dove, have a less tapered tail, and sing like a hoarse domestic rooster. I checked Bent's *Life Histories of North American Gallinaceous Birds*, and Cottam and Trefethen's *Whitewings*, but couldn't resolve these doubts.

Then, several weeks later as I was walking in downtown Saskatoon, I heard a plaintive whistling noise coming through the open window of a car. I glanced in the back seat and saw a caged bird, a pet which is rather expensive but available in most local pet stores. It met the description of my mystery bird! It is the same length as a Mourning Dove; it has a long tapering tail; it is generally greyish in colour (males have bright yellow faces, but females are greyish all over); it has white wing patches which are a diagnostic feature in flight; and its call is a prolonged "queel queel" according to Slater's *A Field Guide to Australian Birds*. What was my mystery bird? I believe it was a female of the species *Nymphicus hollandicus*, a Cockatiel! I'm glad I've solved this riddle. I wonder if anyone else has seen strange things which may have been escaped exotics!



# SASKATCHEWAN CHRISTMAS MAMMAL COUNT — 1984

Compiled by WAYNE C. HARRIS, Box 414, Raymore, Saskatchewan.  
S0A 3J0

A total of 54 counts were received this year reporting 34 species during the count period. The number of counts is one less than last year's all time high while the 34 species exceeds the previous high of 32 in 1983.

There were no new species reported this year. Unusual or rarely reported species included Fisher at Prince Albert National Park and Squaw Rapids; Fox Squirrel at Regina and Weyburn; Gray Squirrel at Regina; N. Flying Squirrel at Good Spirit Lake and La Ronge and Red-Backed Vole at Good Spirit Lake and Raymore. It is not that the latter two are rare in the province, but that both are difficult to locate. At Good Spirit Lake where both were seen they were visiting a feeder after dark.

Populations were quite stable compared to last year. Only one Lynx was reported as they remain very rare at the low in the Snowshoe Hare cycles. Coyotes were down from last year though some good counts were recorded (i.e. 14 at Pike Lake). Mink were much less evident with only 5 localities reporting this species compared to 17 last year. Snowshoe Hare numbers appear to be even lower than last year, if that's possible!

The only species which showed a significant increase was White-tailed Deer, but they may experience a difficult winter with our early snowfall in October which subsequently has crusted making travel difficult for this species.

One interesting note came from



*Long-tailed Weasel*      *Lorne Scott*

Ravenscrag - Eastend count where the only Nuttall's Cottontail they were able to find was in the claws of a Great Horned Owl.

For weather, coverage and participants on these counts please refer to the Christmas Bird Counts found elsewhere in this issue. Symbols found in the tables are as follows:

- \* identified by tracks with estimated number of individuals in parentheses
- + seen during count period but not on count day
- L active lodges or huts seen with number in parentheses
- N nests found with number seen in parentheses
- D fresh diggings seen
- d freshly dead animals seen

Table 1-1. SASKATCHEWAN CHRISTMAS MAMMAL COUNTS

<i>SPECIES</i>	<i>LOCALITY</i>	ASSINIBOIA January 3	BANGOR December 22	BIGGAR December 22	BIRCH HILLS December 22	CORONACH December 21	CROOKED LAKE December 31	CYPRESS HILLS PROV. PARK December 16	DUCK MT. PROV. PARK December 23	DUVAL December 29	EASTEND December 31	ELBOW December 22
SHREW species												
RACCOON		4										
RED FOX		3		*(1)	*(1)					*(1)		
COYOTE					*(4)		5			*(8)		2
GRAY WOLF												
FISHER												
ERMINE					*(3)							
LEAST WEASEL												
LONG-TAILED WEASEL					*(2)		*(2)					
WEASEL species									*(1)	*(1)		
MINK							*(2)					
RIVER OTTER												
STRIPED SKUNK		2				d(1)						
LYNX												
BADGER		2										
WHITE-TAILED JACK RABBIT		25	1	1	*(2)		*(11)			2	4	
SNOWSHOE HARE		2	1	*(2)	*(36)		*(30)		*(2)	*(3)		
NUTTALL'S COTTONTAIL												
FOX SQUIRREL												
RED SQUIRREL			1		H(1)		2	8	1			1
GRAY SQUIRREL												
N. FLYING SQUIRREL												
BEAVER												
DEER MOUSE												
MEADOW VOLE												
RED-BACKED VOLE												
MOUSE species					*(22)		*(2)			*(5)		
MUSKRAT												
NORWAY RAT												
HOUSE MOUSE												
PORCUPINE		1		2	1		1		1	1		
ELK									1			
MULE DEER								9			14	2
WHITE-TAILED DEER		14	+	2		11	4	7	8	*(3)	5	6
DEER species												
MOOSE												
PRONGHORN											6	
TOTAL SPECIES		8	4	5	9	2	9	3	6	8	4	4



Table 1-2. SASKATCHEWAN CHRISTMAS MAMMAL COUNTS

ENDEAVOUR December 25	ESTEVAN December 20	FORT QU'APPELLE December 29	FORT WALSH December 15	GARDINER DAM December 17	GARDINER DAM December 22	GLAMIS-WISETON December 27	GOOD SPIRIT LAKE December 31	GOVENLOCK December 16	HERBERT December 27	HUMBOLDT December 27	LOCALITY  SPECIES
									*(1)		SHREW species
											RACCOON
				2				*(1)	*(1)	1	RED FOX
*(1)			3	7			*(6)	4	1	+	COYOTE
											GRAY WOLF
											FISHER
											ERMINE
										*(1)	LEAST WEASEL
						1	1				LONG-TAILED WEASEL
*(1)							*(2)	*(1)			WEASEL species
											MINK
											RIVER OTTER
								*(1)			STRIPED SKUNK
											LYNX
								D(1)		+	BADGER
*(1)			2	16	*(10)	6	*(28)	4	1	2	WHITE-TAILED JACK RABBIT
				3			*(17)			*(15)	SNOWSHOE HARE
			3	4				7	3		NUTTALL'S COTTONTAIL
											FOX SQUIRREL
		2	40				3				RED SQUIRREL
											GRAY SQUIRREL
							2				N. FLYING SQUIRREL
							L(1)	L(1)			BEAVER
				1							DEER MOUSE
											MEADOW VOLE
							1				RED-BACKED VOLE
			*(1)				*(4)				MOUSE species
							L(4)				MUSKRAT
											NORWAY RAT
		1									HOUSE MOUSE
*(1)		1	7			1	2	2		1	PORCUPINE
			3								ELK
			47	31				69			MULE DEER
	14	4	66	21	5		4	27	27	*(12)	WHITE-TAILED DEER
											DEER species
*(3)			*(2)								MOOSE
								65			PRONGHORN
5	1	4	10	8	2	3	11	12	6	8	TOTAL SPECIES

Table 1-3. SASKATCHEWAN CHRISTMAS MAMMAL COUNTS

SPECIES	LOCALITY	INDIAN HEAD January 2	KAMSACK December 31	KELVINGTON January 2	KENASTON January 2	KUTAWAGAN LAKE December 31	LA RONGE December 26	LAST MOUNTAIN LAKE January 2	LEADER December 18	LITTLE BEAR LAKE December 24	LOVE-TORCH RIVER January 1	LUSELAND January 2
SHREW species												
RACCOON												
RED FOX		1			*(8)	*(2)	*(4)	*(1)			*(1)	*(6)
COYOTE		1	H			*(4)		1	H(1)		*(3)	*(4)
GRAY WOLF												
FISHER												
ERMINE							*(6)					
LEAST WEASEL				*(2)	*(1)							*(1)
LONG-TAILED WEASEL		2			*(1)							
WEASEL species			*			*(1)		*(1)				
MINK							*(1)					
RIVER OTTER												
STRIPED SKUNK												
LYNX												
BADGER												
WHITE-TAILED JACK RABBIT		6	4		*(1)	4		2	*(1)			4
SNOWSHOE HARE		8				*(1)	1			*(3)		
NUTTALL'S COTTONTAIL					*(5)		-		2			
FOX SQUIRREL												
RED SQUIRREL		3				2					2	
GRAY SQUIRREL												
N. FLYING SQUIRREL							+					
BEAVER												
DEER MOUSE												
MEADOW VOLE							*(10)					*(3)
RED-BACKED VOLE												
MOUSE species						*(2)		*(7)				
MUSKRAT								L(7)				
NORWAY RAT									d(1)			
HOUSE MOUSE												
PORCUPINE						2		3				1
ELK												
MULE DEER									12			
WHITE-TAILED DEER		121	4		*(7)	*(3)		22	22			9
DEER species											*(25)	
MOOSE											*(1)	
PRONGHORN												
TOTAL SPECIES		7	4	1	6	8	6	8	6	1	5	7



Table 1-4. SASKATCHEWAN CHRISTMAS MAMMAL COUNTS

MELFORT January 2	MOOSE JAW December 26	PIKE LAKE December 29	PRINCE ALBERT N. P. December 15	RAVILNSCRAG-EASTEND December 16	RAYMORE January 1	REGINA December 29	ROUND LAKE January 2	SASKATCHEWAN R. FORKS January 2	SASKATOON December 26	SCOTT January 2	LOCALITY SPECIES
					*(3)			*(1)			SHREW species
											RACCOON
1			*(4)		1	*(2)	*(1)	*(1)		*(1)	RED FOX
H	*(1)	14		4	3		*(12)	*(2)	1		COYOTE
											GRAY WOLF
			1								FISHER
					1		*(2)	*(2)			ERMINE
					*(1)		*(4)				LEAST WEASEL
2					1		*(5)				LONG-TAILED WEASEL
		*(1)			*(3)				*(1)	*(4)	WEASEL species
							*(3)				MINK
											RIVER OTTER
					*(1)						STRIPED SKUNK
											LYNX
											BADGER
6	*(7)	*(1)			1	6	1		3	15	WHITE-TAILED JACK RABBIT
	*(3)	*(3)	1		2	*(1)	*(18)	*(18)	5	*(1)	SNOWSHOE HARE
				d(1)							NUTTALL'S COTTONTAIL
						*(1)					FOX SQUIRREL
3		2	H(2)	2	1	*(1)	*(15)	H(1)			RED SQUIRREL
						1					GRAY SQUIRREL
											N. FLYING SQUIRREL
L											BEAVER
					2						DEER MOUSE
					2						MEADOW VOLE
					1						RED-BACKED VOLE
	*(1)	*(1)		*(3)	*(18)	*(1)	*(1)	*(1)		*(6)	MOUSE species
*					L(3)				2		MUSKRAT
											NORWAY RAT
											HOUSE MOUSE
					1		2	1	1	1	PORCUPINE
											ELK
				13							MULE DEER
	38	11	*(1)	12	17		5	*(4)	8	*(2)	WHITE-TAILED DEER
											DEER species
			*(5)					*(2)			MOOSE
											PRONGHORN
7	5	7	6	6	16	7	12	10	7	7	TOTAL SPECIES

Table 1-5. SASKATCHEWAN CHRISTMAS MAMMAL COUNTS

<i>SPECIES</i>	<i>LOCALITY</i>	SKULL CREEK January 2	SQUAW RAPIDS December 23	ST. VICTOR December 22	SWIFT CURRENT December 16	TISDALE December 26	WEYBURN December 23	WHITE BEAR January 2	WHITEBEECH December 31	WOLSELEY January 1	YORKTON December 22	TOTAL NUMBER OF COUNTS PER SPECIES OR GROUP
SHREW species			*(1)				*(6)	*(2)				6
RACCOON												1
RED FOX			1		1		*(3)	*(1)		*(1)		27
COYOTE		3	*(4)	1		*(4)		1	*(1)	1		33
GRAY WOLF			*(5)									1
FISHER			*(1)									2
ERMINE												5
LEAST WEASEL		*					*(2)	*(1)				9
LONG-TAILED WEASEL		*				*(1)		*(4)	*(1)	*(1)	*(1)	15
WEASEL species			*(2)									13
MINK		*(4)	*(2)									5
RIVER OTTER			*(1)									1
STRIPED SKUNK							*(1)	*(1)				6
LYNX			*(1)									1
BADGER								+				4
WHITE-TAILED JACK RABBIT		1	*(2)	1	1	*(4)	3	*(10)	+	1	1	41
SNOWSHOE HARE			*(3)				1		*(10)	*(4)	3	28
NUTTALL'S COTTONTAIL		3			*(5)			5				10
FOX SQUIRREL							N(7)					2
RED SQUIRREL			12									21
GRAY SQUIRREL												1
N. FLYING SQUIRREL												2
BEAVER			L(2)									4
DEER MOUSE												2
MEADOW VOLE		*										4
RED-BACKED VOLE												2
MOUSE species		*	*(9)				*(12)	*(20)				19
MUSKRAT			L(1)									6
NORWAY RAT												1
HOUSE MOUSE												1
PORCUPINE		*(1)	*(1)	d(1)				*(2)				25
ELK			*(20)									3
MULE DEER		16		5	34			62				12
WHITE-TAILED DEER		47	1	5	20	*(4)	6	1	*(10)	*(2)	2	46
DEER species												1
MOOSE			*(3)						*(3)			7
PRONGHORN					5							3
TOTAL SPECIES		10	19	5	6	4	9	13	6	6	4	



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# JUNIOR NATURALISTS

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## YOUTH COLUMN

Yes! a column just for you. This is a spot for you to air your concerns, questions or writings, so feel free to contact me, your youth director. There will be a column in future Blue Jay magazines.

### Winter

In winter sometimes it feels like the world outside should be frozen and still, but in fact there's a lot of activity to discover if we become more aware.

Use all your senses when you go out and you will find signs of wildlife, and may be able to tell what they've been doing. Lets explore ...

What is one of the first things you do when you get up in the morning? Well animals eat, too, and their kitchen is all around you. Look for gnawings\* on wood or signs of browse\*, which is for instance a chewed off twig. Maybe there are signs of pecking\* in the bark and wood of some trees. If a carnivore (meat eater) has been feeding you may see fur,\* feathers\* or a bit of blood\* left over. There's different food for everyone and all eat.

What's one of the other things you do first thing in the morning? Well, animals need to do that, too, and just by looking at it we can learn what animals are in the area and what they have found to eat. For instance the coyote\* scat\* may have some fur in it from a past meal. A rabbit\* or hare\* pellet\* will have left over bits of plants in it. And, I'm sure you're all

familiar with bird droppings\*, hopefully you find them somewhere other than your sleeve!

There is another sign of birds that's very interesting to find. Birds of prey, like owls and hawks can't digest all they swallow, so it forms into a lump, they cough it up and spit it out. This lump is called a pellet. Can you guess what might be in it? (If you guessed bones,\* feathers\* or fur,\* good for you!)

Animals need a place to sleep - a weasel's\* den\* for instance could be a crevice by the root of a tree, a rabbit's den may be under a layer of shrubs or fallen tree branches. A hole in the side of a snowbank may be from a grouse\* who dove into the snow for warmth.

Of course along with all the above signs of wildlife comes the most commonly seen sign; foot or wing prints, the animal's tracks\*. Was the animal big or little? are its feet different sizes (like a rabbit's)? was it running? Maybe the tracks lead to a little hole in the snow. Like the grouse, a mouse\* or a weasel will often dive into the snow.

There's a lot to explore isn't there? But wait a minute, there's even more! What about your other senses? So far we've only explored some of the things you can see. What animal might you be able to smell? or who is calling\*, or singing\*, or tapping\* on wood, or whooshing\* through the trees, or snapping\* twigs, or crunching\*?...

If you use all your senses to explore, you'll experience and notice things that you can be excited to tell your friends about. In fact, I'd be interested in your stories, too. Please write and tell me why you care about wildlife, and about your sightings or experiences.

There is an organization called the Canadian Wildlife Service who studies wildlife and the places they live. In the last Saskatchewan Natural

History Society Newsletter there was a special inclusion describing cut-backs to the Canadian Wildlife Service. They need to know that a lot of people care about wildlife, people like you.

So, if you like seeing wildlife and do care, send a letter telling me about it. It'll be printed in the next Blue Jay.  
— Heidi Sutherland, 901 - 2020  
Bellevue Avenue, West Vancouver,  
British Columbia. V7V 1B8

\* The words marked with the \* are used in the following puzzle:

Look for the following hidden words. They may be found horizontally, vertically, or diagonally, either forwards or backwards. Circle the word when you have found it and check it off. These are some of the animals you may find in the winter, also some of their signs. Good luck!

GROUSE  
PORCUPINE  
WOODPECKER  
MOUSE  
SPARROW

P L L E M S R E H T A E F Z Z  
E W D E E R T A Z Z S K U N K  
L E Z B R O W S E Z Z E Z Y Z  
L A Z Z Y K T R A C K S C A T  
E S U O R G Z V Z Y I U Z Z Z  
T E C R U N C H I N G O W L R  
E L E A Z Z S Z G Z N M T S E  
N S E B L Z G I G N I W A N K  
I P D B Z L N Z Z Z H Z P A C  
P A A I B G I Z Z A C Z P P E  
U R K T O L P N R Z N F I P P  
C R C Z N Z O E G E U Z N I D  
R O I Z E Z R O D R R Z G N O  
O W H Z S Z D Z D Z C Z Z G O  
P E C K I N G N I H S O O H W

CHICKADEE  
HARE  
RABBIT  
COYOTE  
DEER  
WEASEL  
OWL  
HAWK  
SKUNK  
SINGING  
CALLING  
TAPPING  
WHOOSHING  
SNAPPING  
CRUNCHING  
PECKING  
DROPPINGS  
SMELL  
KNAWING  
PELLET  
SCAT  
DEN  
FUR  
FEATHERS  
BONES  
BLOOD  
TRACKS  
BROWSE





*Killdeer area, Saskatchewan*

*F. Bellamy*

## MARRIED TO THE WIND A STUDY OF THE PRAIRIE GRASSLANDS

WAYNE LYNCH. 1984. 30 x 24 cm. Whitecap Books, North Vancouver. hard-cover. 116 pp. illus. \$39.95 (available at *Blue Jay Bookshop*).

This is a beautiful coffee-table book with 124 excellent colour photographs by the author. Its size and shape allow these photos to be very effectively presented, and more than half of them occupy a full page. One stretches across two pages to show a late evening prairie horizon with a full moon in a typical autumn sky. There are fewer pages of text than of photos, but these pages include a forward by Elizabeth Cruickshank, six chapters describing the origins of the prairie landscape and its present character, an epilogue,

acknowledgements, and suggestions for additional reading.

Though not a trained ecologist nor even a native of the prairie, Dr. Lynch proves that he has a real interest in and understanding of the Canadian mixed-grass prairie. He invites the reader to discover with him its excitement, diversity, intricacy and beauty, and he is concerned that we are allowing the destruction of grassland ecosystems without knowing what we lose.

The first chapter "The Land — Its Face and Its Temperant" traces the geological steps leading up to the present-day climates and microclimates and stresses the importance of soil and climate and the diversity of plants and animals on the prairies.

The second chapter deals with the flora and fauna of "The Level Plains." In it we find the explanation of the title when Lynch says "Grasses are married to the wind, for they all have wind-pollinated flowers". Actually, this is not strictly true, for many species are self-pollinated, or have given up pollination in favour of apomixis or vegetative reproduction. Unfortunately, there are other inaccuracies, for example, see the caption for the goatsbeard inflorescence shown on page 84. The caption implies that the open flowers are male but the pollen is really above the dark stamens and is on the style of the pistils. The structures in the centre of the picture are not pistils but are completely unopened flowers with both male and female parts.

"Windscaapes," the third chapter, considers sandhill areas like the Great Sand Hills and "Layers of Time" (chapter four) deals with the badlands which erosion is continually



threatening. Lynch speculates on the extinction of the dinosaurs, airing the recently-proposed theory that such periods of extinction may have been caused by asteroids from outer space. This chapter also mentions prairie outlaws, snake pits and the mating behaviour of black widow spiders.

Chapter five, "Coulees," discusses our two kinds of ticks, bison bones, animal behaviour, pheromones and creatures of the night. "Water and Wings", the final chapter, describes the gradual succession of plants and animals in prairie sloughs, up to the time that the area becomes dry and is occupied by the climax grassland of the region.

At the end of this book, the author tells how he retired in 1979 from his medical career to "broaden and diversify" his life experience. He also makes a plea for greater understanding of the environment on the part of his readers, and for support for the Grasslands National Park, the establishment of which was agreed to in 1981 "to preserve and protect the integrity of the mixed grassland ecosystem of southwest Saskatchewan".

In this beautiful description of the grasslands, I regret the absence of the scientific names of the inhabitants. I am particularly critical of the naming and identification of the grasses. Those shown on pages 35 to 59, for example, should have scientific names or at least more generally accepted common names. Nevertheless, loving the native grasslands as do, I am grateful to Wayne Lynch for his text and excellent photographs which revive fond memories and bring new insights. The book rekindles our resolve to work for the preservation of our prairie grasslands. I recommend it, and urge its wide distribution and use. — Reviewed by *G.F. Ledingham*, 2335 Athol Street, Regina, Saskatchewan. S4T 3G4

## CRANES OF THE WORLD

PAUL A. JOHNSGARD. 1983. Indiana University Press, Bloomington Indiana. 257 pp. Hardcover \$37.50

As a child I admired the haunting call of the "wild turkey." Later I was astonished to discover that I was actually listening to the Sandhill Crane.

As I read between the covers of this monograph I could step outside and once again hear sandhills returning from their northern breeding grounds in spiraling flocks as they progressed southward on yet another migration.

Cranes date back some 60 million years to the Eocene. Man on the other hand has a history of less than 2 million years. In that short time cranes have found their way into myth, rituals, dancing and art forms from Australia through Asia, Europe, Africa and North America. Owing to a few of man's activities in and around suitable crane habitat some populations have dwindled to the brink of extinction. The plight of the Whooping Crane, for example, has led to it being used as the symbol of wildlife conservation in North America. Of the 14 species of cranes world wide, 5 (35%) are listed as endangered or vulnerable and a 6th is of indeterminate status. It is with this in mind that Paul Johnsgard has written this fine and up-to-date text on crane biology.

The book is divided into two parts. Section one, the comparative biology of cranes, includes chapters on classification and evolution, individualistic and social behavior, vocalizations, ecology and population dynamics, comparative reproductive biology, aviculture and hybridization, endangered species and conservation, and cranes in myth and legend. The second section deals entirely with the natural histories of individual species. Subject material covered in this section for each species includes other



vernacular names, range, subspecies, measurements, weights, description, identification, distribution and habits, foods and foraging behaviour, migrations and movements, general biology, breeding biology, recruitment rates, population status and conservation, and evolutionary relationships.

The book concludes with information on origins of scientific and vernacular names of cranes, a key to the species and subspecies of cranes of the world, references, and index. The reference list also includes a few titles not cited in the text.

There are 15 figures, 34 tables, 14 range maps, 23 color and 24 black-and-white photographs, and 27 line drawings. Most photos are sharp with good color or contrast, 4 color and 3 black-and-white photographs, however, are apparently out of focus. Few typographical errors were found. The Whooping Crane map mentions Gray's Lake N.W.T. as being an inset, however, the inset is of Wood Buffalo National Park.

Setting these trivialities aside, I would recommend for anyone remotely interested in the family Gruidae that they read this comprehensive account of current scientific knowledge on the world's cranes. — Reviewed by *Brian W. Johns*, 51 Beurling Crescent, Saskatoon, Saskatchewan. S7H 4V6



*Sandhill Crane*

*Larry Morgotch*

## WOOD WARBLER'S WORLD

HAL H. HARRISON. Technical assistance and range maps by Mada Harrison. Simon and Schuster, New York. September, 1984. Cloth. \$29.95 Cdn. 335 pp.

Readers will be familiar with Hal Harrison's two Peterson field guides on nests. *A Field Guide to Birds' Nests* (1975) and *A Field Guide to Western Birds' Nests* (1979). This book is basically an expansion of the warbler write-ups in these field guides, with more detail.

The book starts with an introduction to the warblers, written in layman's language. The author makes the point that warblers are not "our" birds by virtue of the fact that they only spend about three months on the breeding grounds. The rest of the year is spent in migration (two to three months), and on the wintering grounds (six to seven months).

The remainder of the book is concerned with species write-ups, 53 in all. There is also a glossary, an index, a bibliography (quite extensive), and picture credits (for the few photos not taken by the author). There are two inserts of colour photos illustrating most of the species.

Each write-up follows the same pattern, differing only in the extent of material available for that species. Taxonomic changes are described, and some background material is given to explain the changes. Each scientific name is translated and pronunciations are given. Behaviour is then briefly described, sometimes accompanied by some of Harrison's personal experiences. Typical nests and their placement are then described. The incidence of cowbird parasitism for

each species is also reported.

Rounding out the species accounts are brief descriptions of winter and breeding habitats, and photographs of typical nests, typical habitat, birds at the nest, and a map depicting the breeding range of each species.

Some of the species accounts are fairly extensive (Yellow-rumped Warbler), while others (Virginia's Warbler) contain barely two pages of written text.

This book is enjoyable to read; my main criticism is that the content is rather sketchy. The habitat photos are valuable, but the write-ups are done using large print with large spaces between lines. Although the book is well referenced, this is basically one for the layman, and one that is heavily oriented towards nests. The author mentions in the introduction that this book does not concentrate on field marks and exhaustive nest descriptions. Rather, it serves to fill in background for the author's field guides, using personal experiences and opinions.

Potential buyers should keep the above in mind. This is not the book for you if you are seeking hard data on warblers. The Canadian price is also rather steep. However, I did enjoy the book, and I do recommend it. Borrow it if you can. — Reviewed by *Christopher I.G. Adam*, 2636 Argyle Street, Regina, Saskatchewan. S4S 0K1



*Yellow-rumped Warbler*

*F.W. Lahrman*

## HANDBOOK OF CANADIAN MAMMALS. 1. MARSUPIALS AND INSECTIVORES.

C.G. VAN ZYLL DE JONG. National Museums of Canada. 1983. 210 pages, 4 colour plates. 16.5 x 24 cm \$19.95.

Since 1974, many naturalists and wildlife biologists have used A.W.F. Banfield's *The Mammals of Canada* (University of Toronto Press, 1974) as a reference source when identifying mammals and determining their ranges. Now, the first volume has been published of a proposed seven volume series intending to cover all Canadian mammals. The author, van Zyll de Jong, is Curator of Mammals at the National Museum of Natural Sciences in Ottawa.

This first volume presents the current knowledge of the ranges and biology of our shrews and moles, plus van Zyll de Jong's own "tentative" taxonomic arrangement, which differs slightly from that of Banfield and other more recent classifications. The author points out that the genus *Sorex* is a difficult group to classify and that the number of species has still not been finally determined.

Changes from Banfield's taxonomy and names for the Insectivores (shrews and moles) occurring in Saskatchewan are as follows: *Sorex arcticus*, the Artic Shrew, has been renamed the Black-backed Shrew. *S. cinereus*, the Masked Shrew, has been provisionally split into three species, two of which occur in Saskatchewan: *S. cinereus*, the Common Shrew (parkland and forest regions), and *S. haydeni*, the Prairie Shrew (prairie region). The Dusky Shrew, *S. obscurus*, becomes *S. monticolus*, while the designation "American" has been dropped from the American Water Shrew, *S. palustris*.



*Microsorex hoyi*, the Pigmy Shrew becomes *Sorex hoyi*, the Pigmy Shrew. The name of the only remaining Saskatchewan insectivore, *Blarina brevicauda*, the Short-tailed Shrew, remains unchanged.

The book also contains an illustrated key to the Insectivores which, according to the author, will identify prepared specimens as well as live animals. The use of external as well as internal features should make the key of great use to field biologists and naturalists.

Subspecies are not mapped as they are in Banfield, but are covered in the text. The biology of each species is well described, and the write-ups also contain some behaviour descriptions. Skull drawings for each species are provided.

Another excellent feature of the book is the series of range maps, many of which show significant range changes from those in Banfield. An inset shows the Holarctic Region, which gives a useful indication of range outside of Canada, but in the case of those species with a restricted distribution, the range becomes hard to see since the area on such a map is so small (i.e. *Sorex gaspensis*).

Another useful feature of the range maps, one which is not used by Banfield, is the positioning of numbered localities along the peripheries of each range. For example, the distribution of the Short-tailed Shrew in Saskatchewan shows three numbers which correspond to three locations given in the distribution section: Keatley, Bittern Lake and Regina. This pinpoints the edge of the range and makes it easier to locate in reference to a specific study area.

This book should prove to be valuable for field studies and as a basic reference source. The addition of an

identification key and numbered range maps make it superior to Banfield's for these purposes. This series should become the standard source of reference for Canadian mammals, although *The Mammals of Canada* is still recommended as an excellent one-volume reference. I look forward to the rest of the series. No serious naturalist or wildlife biologist should be without this book. — Reviewed by *Christopher I.G. Adam*, 2636 Argyle Street, Regina, Saskatchewan. S4S 0K1

## Arctic Ordeal



THE JOURNAL OF JOHN RICHARDSON  
Surgeon-Naturalist with Franklin, 1820-1822

Edited by C. STUART HOUSTON

Illustrated by H. ALBERT HOCHBAUM

McGill-Queen's University Press

October 1984. 356 pp. 18.5 x 27 cm illus. & maps. Cloth \$29.95 (SNHS members \$26.95 from the Blue Jay Bookshop). A review will appear in the next issue.

# TAXONOMIC REMINDER FOR RECOGNIZING SASKATCHEWAN PLANTS

John Hudson's reputation as botanist par excellence needs no elaboration. He is widely known both for his comprehensive knowledge of botanical species and for his willingness to share that expertise. In this spirit he has prepared his *Taxonomic Reminder*, designed especially for "those in the field who can pretty well tell what genus a plant ... belongs to, but cannot always remember the distinguishing marks of the species therein."

The 63-page *Reminder* is a list — by genus and species — of all native and established introduced plants in Saskatchewan. Each entry, one or two lines long, consists of a descriptive statement, and often a sketch of the key part(s), providing the details observers will need to separate and correctly identify similar species within a genus. Since these distinguishing features are often related to flowers or fruit, the work will be most useful from roughly May to September.

Hudson's plant list is accompanied by four regional checklists: Southwest, Southeast, Centre and North. Each checklist includes a map showing the area treated and approximately 700 species names. The *Reminder* is 8-½ x 11 in.; each checklist is a single 11 x 17 sheet, with species on both sides, designed for folding to pocket size.





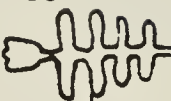


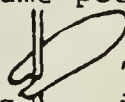














Both checklists and *Reminder* consist of scientific names only and will appeal most to those who already have some knowledge of botany. The

*Reminder* assumes a grasp of botanical terminology. However, by supplementing Hudson's work with any of the several botanical volumes suggested in the introduction, an amateur botanist may discover much of interest. English species names can be added as desired. While designed specifically for Saskatchewan, these materials will be of use throughout the prairies. Roughly 70% of Alberta's plants (no Rocky Mountain species) and 80% of Manitoba's (no tundra or eastern hardwood species) are present in the lists.

The *Reminder* and its checklists are of sufficiently specialized nature that the Saskatchewan Natural History Society does not intend to issue them as a regular Special Publication. However, both will be made available in photocopied form on request. Readers who wish to obtain either *Reminder* or checklists or both may write to the Blue Jay Bookshop. The first 50 sets of text and checklists have been subsidized by a Society member and are available for \$7.00 each. The *Reminder* alone is \$3.00 and checklists are \$1.50 each or a set of four for \$5.00. Prices thereafter will be higher. — Mary D. Gilliland, Special Publications Director, 902 University Drive, Saskatoon, Saskatchewan. S7N 0K1

Opposite: a page of the reminder showing the type of information included



- CAMELINA MICROCARPA: Stem-lvs , pod 
- CAPSELLA BURSA-PASTORIS: Pods 
- CARDAMINE PARVIFLORA: Lvs ; fls ~ 3 mm  $\phi$ , white.
- CARDAMINE PENSYLVANICA: Fls ~ 3 mm  $\phi$ , white; lvs 
- CARDAMINE PRATENSIS: Lvs ; fls white ~ 1 cm  $\phi$
- CARDARIA DRABA: ④; pod , not opening, glabrous.
- CARDARIA PUBESCENS: ④, same pod but hairy.
- CONRINGIA ORIENTALIS: Lvs , cabbagey; pod 1 dm long,  in section .
- DESCURAINIA PINNATA: Pod 
- DESCURAINIA RICHARDSONII: ②; grey; pod 
- DESCURAINIA SOPHIA: ①; cat-dung smell; pod 
- DRABA AUREA: ④, stems leafy; fls yellow.
- DRABA CINEREA: Scapose ④; fls white.
- DRABA LANCEOLATA/CANA: ④ w stem lvs; fls white.
- DRABA NEMOROSA: ①, fls yellow; stem lvs some; pods well spaced, 
- DRABA REPTANS: ①, fls white; stem lvs 0 or 1; pods bunched, 
- ERUCASTRUM GALLICUM: Racemes  $\pm$  bracted w small lvs.
- ERYSIMUM ASPERUM: ④, fls 2 cm  $\phi$ , pods ~ 1 dm.
- ERYSIMUM CHEIRANTHOIDES: ①, fls 3-4 mm  $\phi$ ; pods 1-2 cm.
- ERYSIMUM INCONSPICUUM: ① or ②, fls 6-8 mm  $\phi$ ; pod 2-5 cm.
- HALIMOLOBOS VIRGATA: As ARABIS, but pods  &  $\pm$  terete.
- HUTCHINSIA PROCUMBENS: Pods  in section; tiny spring ①, < 1 dm high.
- LEPIDIUM DENSIFLORUM: Pod , glabrous; racemes spreading.
- LEPIDIUM PERFOLIATUM: Basal lvs 2-3 pinnatifid, stem lvs clasping, entire.
- LEPIDIUM RAMOSISSIMUM: Pod , faintly hairy; racemes strict.
- LEPIDIUM RUDERALE: ②, 1st year lvs 2-fid.
- LESQUERELLA ALPINA/SPATHULATA: Fls  $\pm$  corymbose, pods 
- LESQUERELLA ARENOSA: Pods ; fls racemose.
- NESLIA PANICULATA: ① fls yellow; fruit not opening, .

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# LETTERS

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## OBSERVATIONS OF NATURE

On the afternoon of August 5, 1984 while visiting in the garden of Lee and Lola McMiller of Tyner, we were entertained by a Ruby-throated Hummingbird which was feeding on nearby flowers; occasionally it would alight on a fence and as it would turn its head from side to side, the sun would shine on its feathers, which at times looked black then would sparkle from deep orange to a brilliant red.

We noticed a family of Loggerhead Shrikes feeding on hoppers on the far side of the garden, using a power line as an observation perch. Suddenly a shrike flew directly towards the hummingbird, which immediately took flight at approximately a 35° angle upward; having binoculars in hand, I focused on the two birds. When they had travelled some 200 m with the shrike making some gain, but still not close, the hummingbird dived at a 90° angle into some trees, with the shrike following in long swoops. I saw neither bird again, so do not know the outcome, but the shrike definitely considered the hummingbird as prey.

When I was combining in late August, a Great Horned Owl flew out of a nearby shelterbelt, across an open field toward another shelterbelt. A Swainson's Hawk circling high above moved quickly to position itself above the owl, then folding its wings dropped like a rock and struck the owl to the ground; the owl quickly regained its flight and as the trees were close at hand, gained their safety before the hawk could strike again.

A neighbor, Mrs. Selma Dyrland and her daughter Myrna reported seeing a cougar last June. The Dyrland farm is near the South Saskatchewan River, southwest of White Bear. — *Sig Jordheim*, White Bear, Saskatchewan.  
SOL 3L0

## ELM AT READER LAKE, MANITOBA

On 12 February 1983, Phillip Reader, Fred Maderigga and I went on an 8 mile snowmobile trip across Reader Lake past the historic lime kiln built by the Rev. Reader a hundred years ago. It is still in reasonable repair! (This area is about 13 miles northwest of The Pas, Manitoba.) Opposite this site is Rounded Island covered with spruce and birch. It rises strongly out of the lake on sheer Dolomite walls heavily encrusted with many lichen species but dominated by an orange species — visible from a long distance off from the moving snowmobiles.

On our return trip a large solitary tree was seen in the distance which we thought might be the rare Delta cottonwood. It soon proved to be an American Elm (*Ulmus americana*) — a very vigorous tree to 30 feet with semi-twining trunks and the characteristic vase-shaped outline. It was the only live one seen during the outing. Two other dead elms were found with trunks under a half foot in diameter. They had evidently been dead many years.

An interesting bracket fungus was collected from one of the dead but still standing elms. There are four specimens. One has been sent to Ottawa for identification.

Elm may reach its northern range in the province here in the flood plain of the Saskatchewan River. It's evident scarcity may be indicative of this.

A small grove of Manitoba maples were seen near the elm. — *Walter Krivda*, Box 864, The Pas, Manitoba.



UNIVERSAL  
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MERCATOR GRIDS

F.J.H. Fredeen's article, "Universal Transverse Mercator Grids for recording collecting sites", in the December 1984 *Blue Jay*, is deserving of comment. I quite agree that the system is a good one for that purpose, and like many of my colleagues, have been using it for years.

Freeden observes that "biological, archaeological or other scientific specimens" are routinely treated by means of other systems, all of them cumbersome and problematic. The specification of archaeological remains is indeed a surprise, because Canadian archaeologists have used the UTM System widely in site inventories for more than a quarter of a century! I first learned the system as a student in an Introductory Archaeology lab in 1965 at the University of Calgary. The Archaeological Survey of Alberta (and other provincial surveys, including that of Saskatchewan) *require* the UTM coordinates

on all submitted inventory forms, and have done so for more than a decade.

I now teach in a Geology department and our first-year students all learn the UTM system and apply it in laboratory exercises, a requirement that was in place before I took charge of the labs. Our graduate students routinely use UTM designations in field mapping projects, just as our professors use them for locality designation. The vertebrate palaeontologists at the Tyrrell Museum of Palaeontology in Drumheller routinely use the UTM system as well, and again have done so (while it was a part of the Provincial Museum of Alberta, in Edmonton) for a long time.

In conclusion, I can readily understand why Crosskey, "expressed surprise that apparently no one in North America was using the system yet." Many of our amateur archaeologists in Alberta know and use the system as well. I heartily endorse it. — *Michael C. Wilson*, Department of Geology and Geophysics, The University of Calgary, 2500 University Drive N.W., Calgary, Alberta. T2N 1N4

ERRATA FOR VOLUME 42, 1984

March, No. 1, p. 9 *The new bird identification books*. J.B. Gollop

The line in bold face was missing from Table 1.

Table 1. PICTURE AND TEXT COMPARISONS

Guide	Peterson (Revised)	Robbins (Revised)	National Geographic	Master Guide
Coverage	E. N. Am.	N. Am.	N. Am.	N. Am.

*Prairie Province Species Covered/No. of Illustrations*

*Species Group*

March, No. 1, p. 49 *Western Grebe — one species or two?* Mary Gilliland

The **second paragraph** under **Discussion** should be under the heading **Behaviour**.

December, No. 4, p. 229

The photograph is incorrectly labelled as ducklings, they are **goslings**.

## PRAIRIE NEST RECORD CARD SCHEME

An increase of participants interested in locating and recording information on the progress of nesting birds from many more areas of Alberta, Manitoba, Saskatchewan, and the Northwest Territories are needed.

Information obtained is of benefit to graduate students, government biologists, and other researchers in their studies of birds. For example: at the present, nest record cards for Saskatchewan from the Prairie Nest Record Card Scheme files are being checked by a group of people in Saskatchewan who are compiling information on distribution and breeding of Saskatchewan bird species. Therefore during the next two years it would be very helpful to have many more people contributing information on the nesting birds from all areas of Saskatchewan.

Blank nest record cards, instructions and a copy of the 1984 nesting season report can be obtained by writing:

H.W.R. Copland  
Prairie Nest Record Card Scheme  
Manitoba Museum of Man & Nature  
190 Rupert Avenue  
Winnipeg, Manitoba. R3B 0N2

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JUNE 21 - 26 ANNUAL CHURCHILL TOUR, MANITOBA (\$395)

JUNE 21 - 23 CHURCHILL MINI TOUR, MANITOBA (\$130)

JUNE 29 - JULY 5 CYPRESS HILLS BOTANY & POORWILL TOUR (\$350)

JULY CAMBRIDGE BAY, VICTORIA ISLAND, NWT

JULY 19 - 21 GREY OWL CABIN TOUR, P.A.Nat.Park (\$165)

SEP 28/OCT 5 WHOOPING CRANE TOURS, SASKATOON (\$65)

Tour costs usually include leadership, accommodation, local transportation but not train/air fare. For further information about these tours, write to **SNHS, c/o Stan Shadick, 3F-1800 Main St., Saskatoon, Saskatchewan. S7H 4B3** The registration deadline for most tours is 2 months prior to departure.







